THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED "THE BRITISH ARCHITECT."

VOL. CXXXII.—No. 4380. JANUARY 14, 1927

THE PROMISE OF THE NEW YEAR

HOW should we best write of the old year, and from what point of view of the new year just dawning? We are so near to it all. And yet, as each day's dawn takes on a new virginity, so for most of us there is the feeling at such a time of a new beginning, an unwritten page, which it is within our choice to fill well or badly. May we dare to hope the auguries are favourable, and holding the balance fairly, as between what has been and may be in the future, and looking into it without fear or pessimism, conclude there is to be found what may well encourage us? Failure is nothing when we learn how to use it, and in spite of the misfortunes of recent years, the recent coal strike, our widespread divisions, there is to be found nevertheless, in many directions with which we are concerned here, much that may reassure us. For the interests of art have been shown increased attention. The struggle for Waterloo Bridge, the saving of the City churches, the movement inaugurated for the preservation of rural England, the increased importance attaching to craftsmanship, and the new Bill for the Registration of Architects, to mention a few instances only, point to a very active concern in important directions.

The successful issue of the struggle for the City churches was a red-letter day in the annals of the past year, and the expression of a deeply felt conviction that something more was concerned even than the churches themselves, for if it was granted historical buildings could be removed for the purposes intended, there was no security for any national building. We think, from some discussion with prominent clergy, they have not enough realised that objections to the measure included the conviction of the importance of preserving national traditions, which express in another sense religious convictions as well. It has been said that religion and art are names for the same experiences, and the Church may learn from this to regard this side of her ministrations with deeper respect; for it is not to the advantage of religion to destroy the witness of it in the past in order to promote it in the present.

Waterloo Bridge is another of those cases to which consideration other than utilitarian had to be given. The matter still awaits final decision, and we recognise that to parapet the bridge out, or otherwise to alter it, is not altogether to save it. At the same time, the discussion has strengthened the view in favour of the retention of existing monuments whenever possible, and a conservative attitude towards them.

The decision for it having been reached, we must hope the Registration Bill will effect some amelioration of bad conditions. In making architecture a close profession, it is no doubt with the earnest desire to promote the interests of better building. It prevents no one from building, it prevents only the use of the name of architect—except to those qualifying under Institute requirements. To the objections to thus tying up architecture it may be replied that the disfigurements of the incompetent have made it necessary. Can we not in almost any district detect the architect-built house, both by its better taste and building, and also alas! by its rarity. The profession has accepted the proposed legislation with almost complete unanimity, and to those who plead that exceptional powers in the individual are just those least likely to accept official ruling and to suffer under the subjectivity of institutions, it may be answered that the time is none the less one of emergency and for the general good we must accept this closer rule for the profession. Constituted authority, it has to be admitted, does not like exceptional men who move outside its own orbit, and we must be careful to leave the way open to men of genius, for the gods come often in strange disguises. But the monument raised to the greatest powers will ever be outside and above what institutions and official endorsement can bestow, and is best expressed in the terms of that classical inscription, "Si monumentum requeris perspice."

Late—but not too late—the movement for the preservation of rural England has been inaugurated. It is an object for which we have pleaded continually over past years in these columns and, we venture to think, not without its effect in moulding public opinion. Rural England, which has already suffered so terribly through the disfigurements of commerce and the vagaries of ignorance, needs the support of a powerful body to preserve this national heritage from further destruction and disfigurement, and we welcome the efforts of the R.I.B.A. in this direction.

The steps taken by the Institute during the past year for the better support and recognition of personal craftsmanship, if not of much account in themselves, are none the less an assertion of the importance of the relationships between the two, so vital to the prospects of either. It is a recognition of a lack in the more vital characteristics of craftsmanship, at the same time that the craftsman revealing these better attributes has found so little opportunity for his work; reliance being placed on the more conventional product, the mostly flaccid reproductions of the "office" drawing. So that a sort of flat rate for craftsmanship had become the habit, into which the spirit of the artist was hardly found to enter. We welcome, therefore, present efforts to call more attention to the nature of craftsmanship, and to seek for its more endowed expression. But most of all must we depend on the entrance of a new spirit on either side. We need the heart of the artist to penetrate the arts with a deeper conviction, arising out of a stronger faith in life and its inspiration and delight in its labours.

This is but to touch on a few of the directions in which we see some life and movement. There is still the tendency to avoid the opening out of questions that press for solution, the hesitation of the official mind, and institutions generally, to allow awkward discussion. This can only be met by greater personal responsibility in each of us. For it is not through any lip service to ideals, or complacent optimisms that we can lift present adversity into well being. The arts should be the first to appeal for this greater reality. The ideals of architecture!—ah, but let us see the building. The ideals of craftsmanship!—but let us see the craftsman's work. We can only teach justice by being just ourselves, and words count to-day for so little. The Victorian era, it has been said, was largely the exploitation of virtue, when the cry of prosperity replaced that of humanity; that it was not its vices, but its virtues that brought it in 1914 crashing to the ground.

For the questions that compel solution, democracy and industry can only answer together, and the issue is how to unite them so that they function better. May we not look to the arts to set the example of better values, more corporate endeavour, so that they become the rallying-point between the two? On this we believe rests the promise of the future. Institutions cannot achieve this for us, but the personal responsibility of each one of us can do it. Let us, therefore, face the new year with the purpose to give more reality to our beliefs.

NOTES

New Year Hopes.

WE all look forward with something like hope at the beginning of a new year, and if, with the memory of last year's woeful happenings and the difficulties which confront us in the future, we still find the British people full of hopefulness and confidence, it is because there is something inherent in the British race which justifies that confidence and that hope. It would ill become a paper like *The Builder* to estimate lightly the practical side of life, but it may be permitted to remind ourselves when we mark another milestone in the march of time that we should keep in view an ideal of life and endeavour which shall help to spread some radiance and hope over the way we have to go. It is easy to belittle the aims of the idealist; it is none too easy for the idealist to preserve his hopes. But we hope and believe that underlying all his practical nature and too materialistic outlook, the real Briton has a belief in the ideality which can alone make life worth living.

Enthusiasm and Practice.

IN the reading of the very interesting paper by Mr. Drysdale on the late Leonard Stokes we could not help feeling that there was something essentially typical of the national character in Leonard Stokes. Mr. Drysdale says: "An artist always rather than a scholar, his feelings were always his guide. The essence, not the thing created, the soul rather than the outward form, were what he seemed to strive for. Appreciation for materials, the elementary pleasure of the senses, rather than only the desire for perfect form; the expression of the dumb life in stone and wood, of mass in equilibrium, rather than the display of knowledge, appealed to him in building. Coming at a time when the enthusiasm created by what is now known as the Battle of the Styles was growing somewhat thin, influenced by Ruskin perhaps, his effort was towards the humanising of the Revivalist correctness by means of proportion and affection for the material. He found Pugin cold and thin, but greatly admired Bentley, Bodley and Garner's work. and that of Temple Moore. Norman Shaw and Pearson were also among the gods. All names which appeal by the human charm of their art rather than its archæological correctness. An enthusiast who was always ready to test his feelings for architecture by reason and by the discipline of practical common sense. His was not the enthusiasm of the dreamer, rather of one whose work is to look after the small things of the day."

Educational Ideals.

IF we suggest that even in middle or old age men may preserve and cherish some ideals, how much more important it is that our students shall start their careers holding aloft a high standard of ideality which may always cast a radiance of hope and pleasure over their way. The cultivation and encouragement of this might well be the main endeavour of the schools. Because a right appreciation of the practical necessities of sound building, of the economics of outlay, of wise and careful planning, is so essential a part of an architect's work, it is all the more necessary and difficult to uphold a vision of beauty in building, without which the architect will remain a mere constructor and mechanician.

Preservation of Amenities of London.

WHILST we must all learn to bow to the inevitable, it is none the less true that until the inevitable is made clear, we should keep up a stout fight for the ideals we have aimed at. It seemed that the doom of Waterloo Bridge was nearing a certainty, when the clouds lifted and a Royal Commission stepped in to save it. The result should help to hearten us in our other efforts to preserve the amenities and charm of London.

Illustrations.

WE show a few sketches amongst our notes this week which may help to illustrate our remarks. One of the most beautiful of our old English church spires, a characteristic little church porch, and the dainty little bridge which spanned the water at the Wembley Exhibition, typify the aim of the architect. The world holds many beautiful things, but there are rising up amongst us to-day many buildings which come as near the personification of stupidity and ugliness as one could imagine. No authority in the land can keep this ugliness out. Nothing can raise the level of beauty amongst us but an ever-increasing sense of ideal beauty in those who have to direct building and manufacture and also in those who have to pay for it.

Artistic Expression in Craftsmanship.

NOT unallied to the subject of ideality is the question of a generous effort to encourage artistic expression in craftsmanship. We think our architects would do well to contribute their quota in helping the efforts of the Rural Industries Bureau towards the development of artistic craftsmanship, and we may draw attention to the letter on the subject which we publish on p. 82. We know from our own experience how difficult it is to find a natural talent for the artistic expression of craftsmanship. We remember hoping for some good wrought metal furniture for the doors of a country house from the local blacksmith, and the result was an attempt to vie with the painful

A Reminiscence of Wembley.

Steeple of Lechlade Church.

neatness and finish of machine-made stuff. The Rural Industries Bureau think they can bring about improvement; if so, architects ought to help them.

Rome and Jarvis Student Designs. No student or lover of fine architecture should fail to see the very fine collection of drawings in the east gallery of the Imperial Gallery of Art at the Imperial Institute, which are being exhibited by the British School at Rome. The selection of works by Rome scholars and Jarvis students covers the work of 1913 down to 1924. The School of Rome may take some reasonable pride in having been the means of bringing forward such talented work. Nearly all of it is in the front rank of draughtsmanship, from the brilliant work of H. C. Bradshaw to the refined and beautiful drawings by Stephen Walsh. The conjectural restoration of these fine works of ancient times shows in a very striking way what was once the power and glory of Rome. But, apart from the realisation of the luxury and magnificence of these great works, we may hope that some of our students at least will be inspired by the beauty of proportion and detail which we so sadly lack in most of our modern work. The Cortile of the Palazzo della Cancellaria at Rome, and the Stoa of Hadrian at Athens tell us something of the realities of fine building.

The Architect's Services. It seems to us that too much stress is laid on the fact that much actual making of working drawings for a building is now, in these days of steel construction, not done by the architect at all. But this is due to a misunderstanding of what constitutes the real value of the architect's services. In some cases, the highest essential value of an architect's service lies in his business capacity in getting over all sorts of financial and technical difficulties; but the making of beautiful buildings, in addition to all the economic and practical values, must always remain the one important value of the architect to his client. Some very plain truths have been stated in an article by Mr. Arthur C. Holden, in the A.I.A. *Journal*, and one of the most pertinent things is that whilst it is theoretically true that an architect should be selected on account of his professional qualifications, not one man in a thousand has the information on which to base such a judgment.

A Fine Artist. THE death of Mr. F. Cayley Robinson leaves a gap in that more romantic and contemplative expression of art which we associate with its finer issues. There was a poetry and imagination in his work which revealed a gentle nature, touched with its own experiences, lending a charm to work as sensitive as it was accomplished. A worker in many vehicles, his versatility was considerable. His excursions into mural art, though finely conceived, were obstructed by the habit, so unfortunately inherited, of indirect approach: that is to say, the work was of the studio kind, to be fixed afterwards on the wall itself, instead of the more robust and disciplined mural painting which is executed on the wall directly. This can never be more than a pale alternative to the real thing, which requires that we should work on the wall itself where alone all the conditions governing its requirements can be properly realised.

Three Notable Engineers. BY the death, last week, within a few days of each other, of Sir Francis Fox, Mr. Ernest Fiander Etchells, and Mr. H. Percy Boulnois, three diversely notable figures disappear from the arena of structural engineering. Their careers and achievements had but little in common. Sir Francis, dying on January 7, in his eighty-third year, had attained to world-wide fame, and had finished his course. Mr. Etchells, who died on January 5, was but fifty years old, and might be supposed to have energy and talent awaiting fuller development, for his work was but little known beyond the technical circles in which he moved. But his keenly scientific and acutely critical mind had won the respect of his professional brethren, and he will be especially missed at the Institution of Structural Engineers (formerly the Con-

Porch of Alderley Old Church.

crete Institute), where he was an energetic force. Perhaps his most important service to the Concrete Institute was his active share in the standardisation of the technical formulæ relating to concrete engineering.

Sir Francis Fox. SIR FRANCIS FOX was a constructional engineer of more expansive mould. Indeed, his name is associated with some of the most notable civil engineering works of modern times. To mention but a few, the Mersey tunnel, the Liverpool overhead railway, the Simplon tunnel, the rock railway to the top of Snowdon, the Cape-to-Cairo railway, two London tube railways, the swing bridge over the Dee at Chester—these are works Titanic enough to establish any man's claim to eminence as an engineer. It was Sir Francis Fox's experience with the Greathead grouting machine on the Tube railways that vastly increased his practical interest in architecture. He saw in the Greathead machine—which, by means of compressed air, forces liquid cement into crevices, cavities, and joints—an effectual means for the preservation of ancient buildings. After experimenting with the machine on the decayed walls of churchyards, Sir Francis was able to recommend its adoption for the arrest of the crumbling fabrics of cathedrals. By this means he prolonged indefinitely the lease of life of the cathedrals of Winchester, Canterbury, and Lincoln, and the machine is now being used at St. Paul's. Always fertile in happy ideas and expedients, Sir Francis came to the rescue of the war-time need for hospital linen and calico by stripping off the mounts of engineering drawings, and collected enough to supply 121 miles of textile fabric to the hospitals.

A sketch from Baden-Baden.

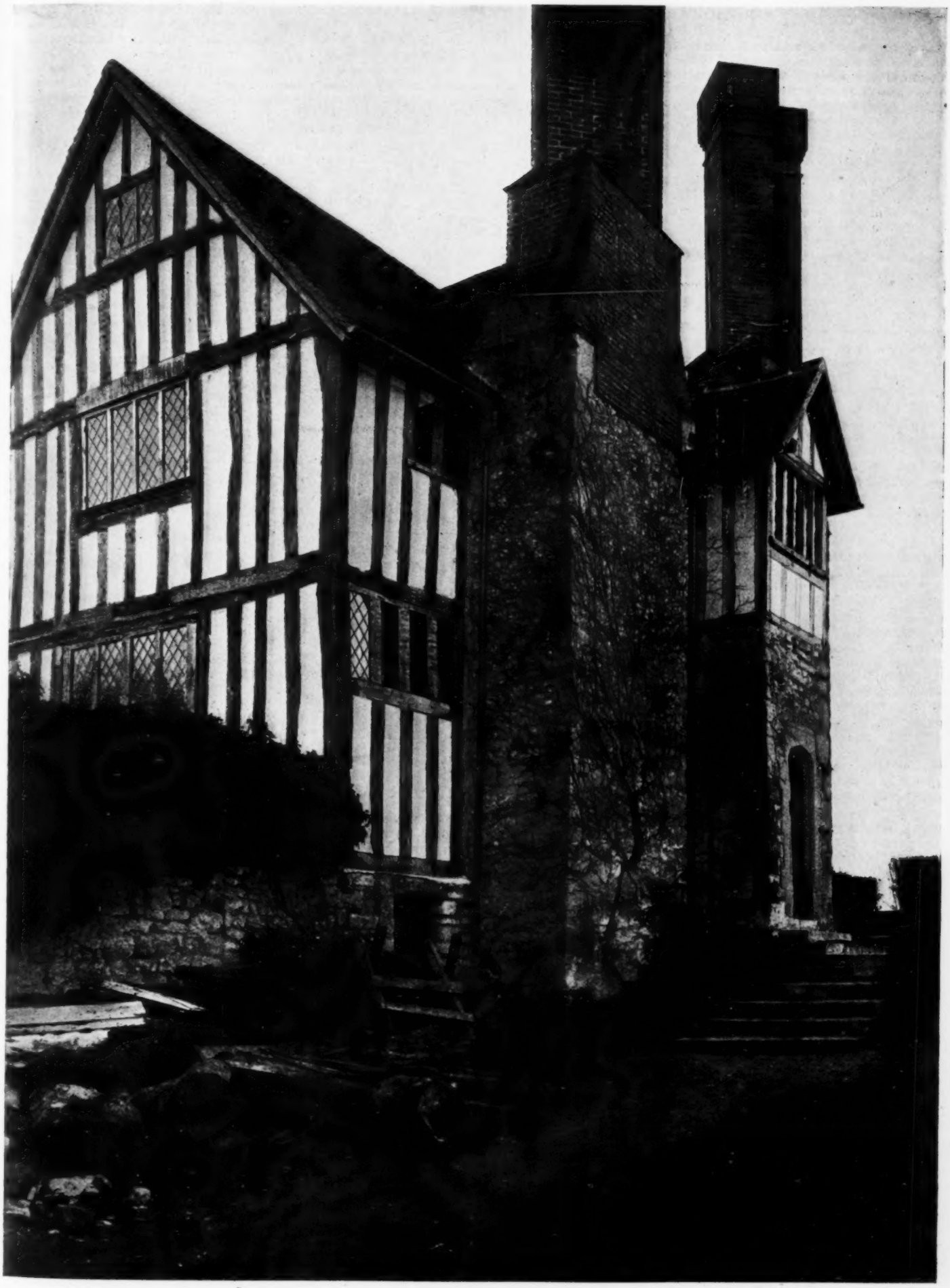
Mr. H. Percy Boulnois. THE third death that we have to record is that of Mr. H. Percy Boulnois, M.Inst.C.E., at the age of eighty-one. He was past-President of the Institution of Municipal and County Engineers, and was city engineer to Liverpool from 1890 to 1897. Among other appointments he held were those of city surveyor of Exeter (1874 to 1883), and borough engineer of Portsmouth (1883 to 1890). On relinquishing the Liverpool appointment, Mr. Boulnois became an inspector under the old Local Government Board, and at the time of his retirement from service under that body, in 1911, he occupied the position of deputy chief engineering inspector. A well-known authority on road construction, he was appointed a member of the advisory committee of the Road Board in 1910.

Art Schools. THE Presidential address at the annual meeting of the National Society of Art Masters included reference to the growing recognition of the importance of the relationship between Art schools and the design and style of commercial products. It is indeed hardly possible to overstate the importance of securing a greater degree of co-operation between manufacturer and school. Many will agree in deploring the use of the word "art" in conjunction with technical education, because the word has become divorced from its real meaning as signifying a quality inherent in a good article, and has of recent years been associated almost exclusively with ornamental flourishes. To obviate this it was suggested that the words "technical art" should be substituted, and this change would at least signify to the public something distinct and apart from the usual "art" product. The commission that is sitting on technical education in Dublin will not, we understand, be in a position to report for some time, but its findings should be of interest on this side.

Mosaics. THE paper read at the R.I.B.A. by Mr. Boris Anrep on Mosaics, and of which a report was included in our last issue, was of more than ordinary interest in that it presented the right approach of craftsmanship in regard to design and treatment. It was evidence of the advance towards sounder methods and a better artistry. Mosaic has been for too long a dull and lifeless affair in which the material was used with little sense of its possibilities, so that all interest had gone out of it, so little was the artist concerned. And even now there is mosaic work being done which is no more than the imitation of the cartoon. A notable instance of this mechanical approach of a beautiful material is to be seen in the mosaic work in the spandrils under the dome in St. Paul's Cathedral, which exhibit little enough of the qualities of a beautiful material. The method there employed was, we believe, that of sticking down on paper or other material, the tesseræ to be afterwards fixed to the wall. The work of Mr. Anrep is a welcome change from these methods and is full of first-hand vitality of treatment. It is also one of those welcome assurances that the outlook on craftsmanship is being lifted into a higher plane, in closer relation to art than to commerce.

The Royal Canadian Academy. MR. HENRY SPROATT, LL.D., F.R.I.B.A., of Toronto, has just been elected President of the Royal Canadian Academy. He is the first architect who has occupied this position. The following architects have also been elected Academicians: Hugh G. Jones, F.R.I.B.A., Montreal; Ernest Cormier, R.I.B.A. (Henry Jarvis Student, 1914), Montreal; J. O. Marchand, Montreal; J. Melville Miller, Montreal; Hugh Vallance, Montreal; John M. Lyle, Toronto.

The London Architectural Medal. THE annual award of a medal for the most meritorious architectural work erected during the preceding three years is a mark of distinction which even our foremost architects are no doubt glad to receive, and the medal which the Royal Institute of British Architects now awards has already been won by several well-known men for equally well-known work. That the awards have so far been approved by the profession we have no doubt, and while we have architects capable of designing such buildings as have already won distinction, there will be no lack of interest in the award itself, though there may be apathy in suggesting suitable buildings for the medal. The jury making the award are dependent upon the profession for such suggestions, for while, sooner or later, they may get to know about works suitable for the medal, they may very well overlook some which have not been suggested to them and which they are not familiar with. A correspondent writes suggesting that our readers be given an opportunity of naming suitable buildings for the medal, as "it would be a great help to the jury and might have the result of unearthing some very fine bit of work that has not as yet secured public attention." We shall be willing to assist in the way suggested and to publish any reasonable proposal. It is, we think, doubtful whether there is the amount of interest we might have looked for by the profession in the award of this medal. Those who feel any genuine interest in the subject should at least take the trouble to record their votes, and thus show their appreciation of what they consider is of value in recent architecture.



Long Crendon Manor, near Thame, Bucks: West Elevation,

MR. PHILIP TILDEN, Architect.

THE TREND OF 1926

By HOWARD ROBERTSON.

One of the soundest and most interesting methods of forming an opinion of present architectural standards is the formation from time to time of retrospective exhibitions such as that which is still being held at the A.A., in which are hung examples of the work of Past-Presidents dating as far back as sixty years. A show of this type is particularly valuable, because it enables one to bridge the gap between the past and the present in progresaive stages. The drawings are a much better record of influences and movements than could be any written account. They show the individuality of the architects as designers and as draughtsmen, and they also disclose the fact that the perspective artist has never ceased to be reckoned as an effective aid in the effort to secure the elusive job.

Perhaps the net result of an examination of the work would be the conclusion that "plus ça change, plus c'est la même chose." Every decade seems to produce its architectural leaders, its originators, and—as a foil—its gallant company of die-hards. The same determination to tackle the problems of the day, the same controversies over æsthetics and expression, the same peculiar little vogues and fashions were evident twenty years ago as they are to-day, and it is in fact surprising to see how in some cases a thirty-year-old scheme is prophetic of what we to-day consider quite advanced architectural rationalism; but it would not be fair to conclude that differences between the past and present conditions do *not* exist, and that the present architectural standard does not reveal some quite encouraging evidences of progress over that of the preceding generation.

Noticeable during the last two or three years, and particularly evident in the work executed in 1926, has been the improved technique in design, particularly in respect of general composition and the maintenance of scale. There is greater certainty in such essentials as fenestration, the sub-division of façades both horizontally and vertically, and as a result the element of amateurishness in London street architecture is tending to disappear. Perhaps because of this effort to attain to breadth and simplicity of scale, the detail of much of the newer commercial work has suffered from lack of interest and poverty of imagination. A rather crude series of motifs seem to be in fashion at the present moment—what an American draughtsman might call "snappy tee-square stuff." There has been a good deal of this type of detail in Kingsway, whence it has crept into sections of Regent-street, Oxford-street, and elsewhere; it characterises chiefly the work of architects who are more vigorous and practical than scholarly.

Regent-street itself has never ceased to be a topic of discussion, if not of dissension, but it has probably more protagonists to-day than was the case a year ago, and certainly it has been greatly improved by the completion of the Quadrant, which constitutes the most uniform and satisfactory part of the design. One of the difficulties with the architecture of Regent-street, and of buildings of the type of Devonshire House, is the curiously "cardboardy" appearance of the façades, due, no doubt, to walls of stone which have only slight reveals. The massing of these fronts assumes something of the strength and power of the massing of the Italian Renaissance, and while they are bland enough in their fresh whiteness, they will be capable of a certain frowning sternness when begrimed; but with it all, one detects the essential thinness of the frame construction and veneer, and the effect of this constitutes an anticlimax. Much stronger than any argument of pure æsthetics or "expressions" in favour of the desirability of modernising our outlook on design is this obvious incompatibility between modern frame construction and forms which were originally conceived as being built from the solid. One gets over the shock of seeing the heavy steelwork that lies back of these massive stone arches in Regent-street which form connecting links in the Quadrant schemes. Steel is sometimes inevitable, and the London Building Act is always with us; but all the same, it is very nearly time that such motives of pseudo-massive architecture were discarded, for not only are they an expensive anachronism, but they have very little intrinsic interest.

Another small point which detracts in these new buildings is the use of the steel window, not qua steel, but because it is designed in such very near resemblance to a wooden window. Painted white, with sub-divisions resembling those of the traditional wooden sash, these steel windows fail, however, to complete the illusion because they have neither the depth nor the modelling of wood, and appear strangely thin and paper-like. Could they be treated in the more modern conception of large sheets of glass secured by a light steel frame, they might attain an interest and quality of their own; as it is, both the general design and the structural detailing of many of our new buildings are rather in the stage of the automobile in its early days, when it was called, and resembled, a "horseless carriage."

While design has failed, on the whole, to take advantage of opportunities offered, there is no question but that technique in the fitting and equipment of our buildings is improving enormously. The cinema is an instance; some of the latest London halls are the equal of any in the world, both in design, furnishing, and methods of heating, ventilating and illuminating. The same may be said of some of the most recent big shops, in which it is noticeable that a great deal of attention is paid to details such as the window and counter fittings, the treatment of the lifts, etc. Peter Robinson's, and the Austin Reed premises in Regent-street, are just two instances, and it is certain that in the future still greater efforts will be expended in this direction. The value of good design is evidently being increasingly appreciated in the commercial world, as witness the alterations to Stagg & Mantle's premises in Leicester-square, where the architects have turned a drab front into one of the most cheerful and attractive façades in the whole of the West End. Another small piece of evidence is the attention paid to such details as shelters or marquises, which, of course, have an advertising value apart from their utility. A number of very well-designed shelters have recently been put up—at the Embassy Club, Verreys, Debenhams, the Holborn Restaurant, Simpson's, to mention but a few—and the design of these is equal to the best Continental standard.

No doubt the Paris Exhibition is having a subtle effect on craftsmanship and design in this country. Designs like that of the amusing "Paris Trades" shop in Berkeley-street come, of course, straight from Paris; but there are elsewhere indications in shop fronts, the treatment of metal and glass, etc., that modern French design is having its influence. Incidentally, some outside stimulus has been badly wanted, for while English craftsmen have never ceased to do good work, their design sense has been in abeyance; this is true of metal work, door furniture, electric-light fittings, one might say of all items of stock equipment. Design in lighting fixtures is beginning to improve—but very slowly—and the catalogues still show the same models that were illustrated a quarter of a century ago. Nevertheless, some of the cheaper fixtures of a rather "engineering" type are both practical and clean in modelling, and it only remains for some of our leading firms to infuse into their more elaborate designs a little of the spirit which animates their Continental rivals for them to regain the position in this field which they are so rapidly losing. There are plenty of young architects who are capable of turning out for these firms really good and fresh designs for such details as chandeliers and brackets, designs which would be in harmony with the more modern trend in design.

A sign of the times is the excellent design and workmanship which is being put into our public services. 'Buses and tube trains are not buildings, but they are very nearly architecture, and are susceptible of being well planned and suitably decorated; and the same thing is true of the stations and depôts which house them. The new Underground stations are designed in a fresh and vigorous modern spirit, and they herald a new era in the designing of public utility buildings. Good composition and planning, directness and simplicity of expression, excellence of lighting and decorative effect make of such stations as Morden a vehicle not only for public amenity but also for discreet and effective advertising of railroad efficiency.

The new telephone boxes are by now a familiar sight, and Sir Giles Scott's design, lit by night with a warm and hospitable internal glow, must have induced many a sluggard John Citizen to "say it by telephone." In similar genial fashion are we "couéd" into Post Offices by signs which at street corners indicate their convenient proximity.

To turn for a moment from town to country, the preservation of the beauty of rural England would not be a difficult matter if all developments and individual houses could be designed by the capable young men who are maintaining in small house design a very high standard (and who are proving, *en passant*, that school-trained men can tackle cottages as well as palaces). A town like Welwyn Garden City is a marvellous place, and the architects have shown how very attractive small houses and community buildings can be.

Not quite so encouraging as some of the executed work is the standard of successful competitive design. Quite frankly (this is *not* written as an "unsuccessful competitor") the elevational design and detail which hallmarks the winning design is nearly always of very poor quality. Planning is excellent, but somehow the fear of *not* winning seems to paralyse competitors' creative abilities. Competition conditions are vastly improving, what with juries and a reorganisation of the Institute's committees; but it is still a little doubtful whether "safety first" is not responsible for placing buildings won in competition in a state of elevational inferiority.

The architectural results in any year are by no means due entirely to individual effort. There is also the collective effort of the Institute, which works very hard and achieves results which may not be immediately felt but which make for progress and improvement later on. The Board of Architectural Education is one of the most useful sections of the R.I.B.A. in this respect. It does a very big work, scarcely realised by the majority of members, amongst the architectural schools of the country, particularly those struggling institutions which have to do their own battling against local inertia, prejudice, jealousy, lack of funds and equipment, and all the difficulties which beset education in its initial stages. The usefulness of the Board depends almost entirely on its personnel, and in this respect it has been lucky during the past year; it has been establishing its own traditions, too, in regard to policy and persons, and there seems every prospect of confidence in the good work going on even more smoothly with increasing experience.

The past year of architectural activity cannot be dismissed without mention of the written word. Never since the war has the battle of theory been more vigorously waged in the building papers, and never have publishers been better fed with books on architecture, some with pictures and some without.

Reviewing it as a whole, the past year seems to have been distinguished by an improved general architectural standard rather than by works of outstanding brilliance. There is certainly every reason for optimism as regards the future.

Faience Decoration for Mortuary, Kensington Infirmary.

BY PHOEBE and HAROLD STABLER.

MESSRS. KNAPP-FISHER, POWELL & RUSSELL, Architects. (*See page* 84.)

ANCIENT HINDU ARCHITECTURE IN JAVA

I.—THE BOROBUDUR TEMPLE AT DJOKJAKARTA.

BY W. ROBERT FORAN, F.R.G.S., F.R.A.I., ETC.

THERE are many relics of the admirable art of the Hindu architects scattered about Central Java and East Java, but those in the vicinity of Djokjakarta are the most famous and best preserved. All of them, however, have suffered severely from the elements, time, earthquakes and vandalism; but the Borobudur, Prambanan, and a few others have been restored as far as is humanly possible, or else are in the process of being restored, by the Archæological Service of the Dutch East Indies. It is unfair to compare them to other equally well-known and better-preserved monuments of ancient Eastern art, such as the Taj Mahal at Agra, the Shwe Dagon Pagoda in Rangoon, and the Angkor Vat in Cambodia. None of the Java relics is so truly beautiful or imposing as these three temples, although it is often claimed that the Borobudur is the most beautiful building in the Far East. That claim, in my opinion and that of many travellers in the Orient, is an exaggerated one. In its colossal size and its architectural design are to be found the chief points of interest.

The Borobudur Temple is situated in wonderfully beautiful surroundings. You approach it by a well-shaded road with Mounts Merapi and Verbabu forming an effective background and overshadowing the massive bulk of the ruins. The enormous pile of greyish-tinted volcanic stone stands in a plain of slender coconut palms and green acres of rice-fields, and faces the mist-shrouded craters of these twin volcanoes; and behind the gigantic mass of stonework is a distant border of green and tender blue hills. The greyish tint of the material used in its construction serves to enhance the sombre, imposing effect of this enormous building. It is the size of Borobudur that creates the most lasting impression. Its base is 531 ft. in length; and it is claimed that the carvings and ornamentations, if placed in line and touching each other, would measure something like two miles in length. I can well believe it.

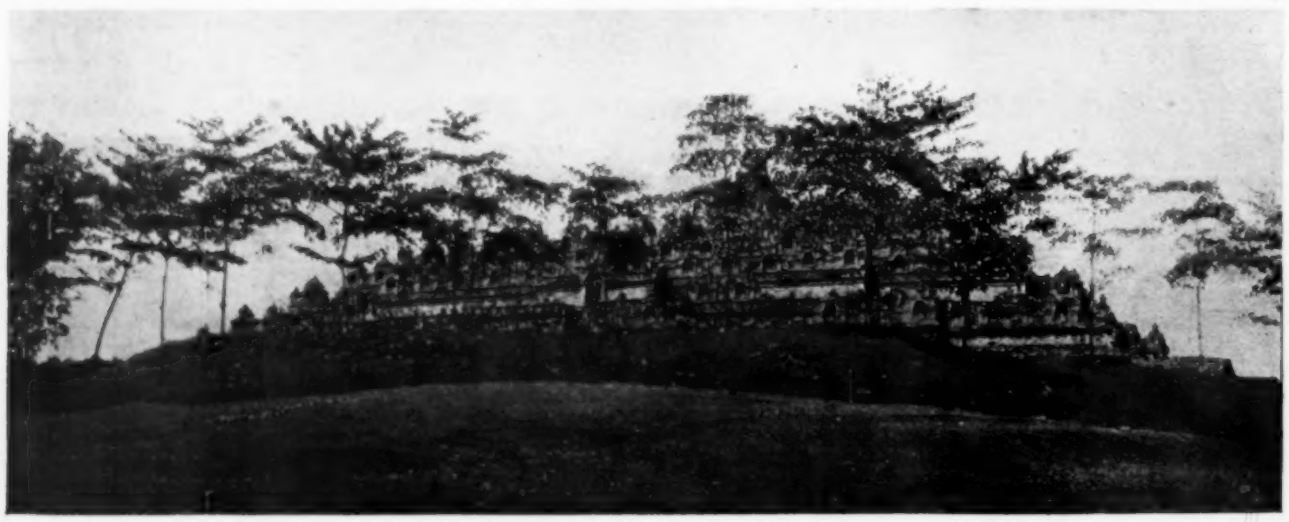
The Temple at Pawon, with entrance to the single interior chamber.

Upwards of eleven centuries have passed since this gigantic building was erected, and frequent earthquakes, volcanic eruptions, tropical rains and suns, and the vandalism of mankind have each assisted the process of decay; but the Borobudur remains to-day an impressive fact—a wonderful product of master minds among the Hindu architects of the ninth century. Nothing is really modern about it, except the small Government hotel that squats at its foot beneath the shade of big, leafy trees.

Nothing definite is known in regard to the history of the Borobudur Temple. No inscriptions or other records have been discovered which make mention of this stupendous Buddhistic monument. The only indication as to the probable date of its erection is to be discovered in the short inscriptions above the bas-reliefs on the covered base of the Temple. The characters used for these writings confirm the supposition that they were inscribed about A.D. 850, and it would seem obvious, therefore, that the building of the Temple must already have been commenced about that time. Most probably the Borobudur was erected over part of the ashes of the Lord Buddha, under the inspiration of Hindu architects. However, about A.D. 925, something must have occurred which caused the downfall of the Hindu Empires in Central Java, while those in East Java still continued to flourish. What events brought about the overthrow of these empires are unknown. The Borobudur Temple suffered, however, through the collapse of the Hindu influence. Then came the successful Mohammedan invasion, and all interest in the completion of the vast monument was lost. It was never actually completed, a fact which has been established beyond all question.

During the brief period of British influence in Java, Sir Stamford Raffles ordered a survey of these ancient ruins. It took a long time, however, before the monument was cleared properly, and then further traces of decay became patent; but no definite steps were taken to arrest this decay. Only during quite recent years has the Dutch Government voted funds for the restoration of the Borobudur, and this has been carried out with most creditable success.

The building is in the form of a gigantic stupa, built not upon a hill but around it. The hill forms the core of the stupa, being enclosed by a series of four sculptured galleries on top of which rise three terraces, of which the uppermost one has in its centre a bell-shaped stupa. This style of architecture originated from India and, in its most simple form, is a half-globe erected or not, as the case may be, on a pedestal and protected by masonry in the form of an umbrella. In the course of time this most simple design underwent a good many changes. In some cases the half-globe was either lengthened or flattened; in other instances the pedestal changed into a series of terraces, which sometimes occupied more space than the half-globe. But



The Borobudur Temple, viewed from the east face, as seen from the village.

View from the Upper Terrace.

View of Upper Terrace below crowning Stupa with rows of dagobs

always the half-globe remained the essential part of the whole building.

When first viewing the Borobudur, it is quickly noted that the Temple stands on a broad platform, from which rise four successive polygonal galleries, while on top of these galleries are three circular terraces adorned with lattice-work dagobs of masonry. Each of these dagobs contains an image of the Buddha. From the centre of the uppermost terrace rises the bell-shaped stupa, its actual summit broken off probably as the result of an earthquake. One would suppose quite naturally that this last-named stupa formed the principal part of the whole building, the remainder being nothing more than an elaborate pedestal. If the whole building, however, is viewed from a distance, for instance from the front of the small hotel and when silhouetted against the evening sky, it will be observed that the contours of the mass form a distinct circular line. The whole of the complexes of galleries and terraces form a flattened half-globe, of which the stupa at the summit is only the crowning portion. The platform, which is reached after climbing the first flight of steps, must be omitted, as it does not form part of the original design of the architects of the building. When the base was excavated, it was discovered that a series of reliefs had been wrought on it, but that these had never been completed. The natural inference, therefore, is that, when building this monument, the architects recognised that the base originally planned would not be strong enough to support the whole structure and, in order to strengthen this base, a large band of masonry was built round it like a gigantic stone ring. This is now actually the first platform of the Temple.

The four galleries above this lower platform at the base are all polygonal but yet built in such a manner that, when one is contemplating the mass of the building from afar, they do not infringe upon the circular line of the contours. They are enclosed by balustrades; and the inner walls of these, as well as the inner walls of the galleries, are all adorned with bas-reliefs. At regular intervals, niches have been built on top of these galleries, each niche containing, or having once contained, an image of the Buddha. In the middle of each of the four faces of the building, these niches have been intersected by flights of steps, and on either side of them are placed images of sitting lions;

The Southern Gateway with Arched Doorways.

and, where the stairway crosses the galleries, arched doorways are still in existence.

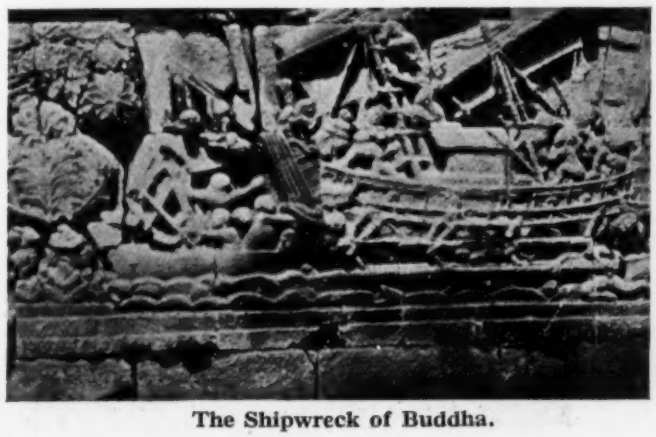
The first thing which commands the attention, when ascending the monument to the stupa on the summit, is the abundance of the ornamentation of the galleries. From the first of these upwards, the sustaining walls are covered with exceptionally well-executed bas-reliefs illustrative of the various episodes in the life of Buddha. Gargoyles decorate all the angles; and delicate flower and festoon motifs, arabesque and volute work, birds and animals serve to break the monotony of the gutters and run along the cornices.

The images in the niches are all Dhyani-Buddhas, these being the rulers of the four quarters of the earth and the zenith. Those at the Borobudur Temple can be identified by their attitudes and by the situation they occupy. In the first four rows of niches there are ninety-two images on either side of the building. Those on the east are images of Akshobya; on the south, of Rathnasambhava; on the west, of Amithaba; and on the north, of Amogasiddha. The fifth row, on all sides of the Temple, has images of the same Dhyani-Buddha, and there are sixty-four in number; each one represents Vairocana, the ruler of the zenith.

On the terraces there are no Dhyani-Buddhas, but all the images there portray every Buddha known in history. These are all enclosed in lattice-work dagobs, and the figures represent the Buddha in the attitude adopted when preaching. In the crowning stupa of the monument was found still another image of the Buddha, but it had never been completed. This is, most probably, an exact replica of the also unfinished Buddha's image which was erected on the spot where the Gaudama Buddha assumed Buddhahood. At present, this incomplete Borobudur image stands on a dais near the base of the great monument, close to the site of the little hotel.

It is not possible to explain all the bas-reliefs, even in the light of our present knowledge of past history. When following the texts of the Yatakamala and Lalitavistara, which are both Sanskrit books recording the stories of the different incarnations of Buddha, it is possible to give an explanation of what was meant by some of the reliefs on the lower galleries; but many of them are still not understood. Generally speaking, the reliefs first give a sketch of the misery of life's eternal turning, followed by pictures painting the way to redemption; while on the galleries this is

An Episode in the life of Buddha.



The Shipwreck of Buddha.

Bas-reliefs on the Eastern Gallery of the Borobudur Temple.

T

The Temple at Mendut, showing form of the design and the mural decorations and bas-reliefs.

The Eastern face and Gateways of the Borobudur Temple.

continued with narratives of the former lives of the Buddha and concludes with tales relating to the future.

A principal entrance cannot be noticed, for all of the four faces of the colossal building are constructed in exactly the same manner; and neither in dimensions nor in ornamentation of the entrances and gateways can be observed any material distinctive features which would single out one of them as having been considered of more importance than any of the others. Only from the fact that all of the narratives represented by the bas-reliefs commence at the eastern gateway—the one at the side of the village and farthest from the hotel—can the inference be drawn that this formed the main entrance to the Temple. When starting forth on a tour of the massive grey pile of stone, it is necessary to turn to the left in order to follow intelligently the story unfolded by the bas-reliefs.

The architects and builders of the Borobudur Temple undertook an immense task, especially when one remembers that in the eighth and ninth centuries modern equipment was lacking. That they displayed a highly developed sense of art is proved by the fact that they saw fit to enliven the imposing effect of this gigantic structure by the virtuosity of the chisel.

Within a short distance of the Borobudur Temple are two lesser Hindu architectural specimens, of which that at Mendut is the most imposing. Both are very much smaller than Borobudur, and far less distinctive and interesting. *Tandji* Mendut—*Tandji* simply means "temple"—is pyramidal in form and stands about 60 ft. high, with the exterior walls elaborately sculptured. It possesses one interior chamber, some 15 ft. square, which contains three statues of more than life size. The largest and central one is believed to be an image of the Buddha in the act of preaching, while the other two are most probably figures of disciples. The larger figure is a particularly fine piece of workmanship and quite as impressive as any of its particular period to be found anywhere. It is excellently preserved, and is seated on a masonry throne. *Tandji* Mendut was most probably built in a later period than that of Borobudur. It was discovered in 1835, and restored as much as possible in 1897.

Almost across the road from *Tandji* Mendut is the even smaller *Tandji* Pawon. This relic is considered of very little account in Java; and, beyond its picturesque situation and the excellent state of its preservation, there is little of interest. It is handsome, particularly in the graceful arrangement of the stupas on its roof, and the exterior walls are covered by rather weatherbeaten bas-reliefs. There is one interior chamber and but one entrance to it. Practically nothing is known of its history or of its age, but its better state of preservation than that of the ruins of Borobudur and Mendut inclines one to the belief that it was probably built at a later period in the history of Java.

The Borobudur and its satellites, Mendut and Pawon, stand to the west of the town of Djokjakarta; but some twelve miles to the east of the town are many more interesting temple ruins, although none so impressive as the massive pile of Borobudur. Of all the ruins around Djokjakarta, the Borobudur must always hold pride of place and fill the minds of the present generation with wonder at the daring minds of the ancient architects who designed and built it.

(To be continued.)

AMERICAN APARTMENT HOUSES.—I

By F. E. BENNETT, A.R.I.B.A.

[We give this week the first part of the Report of Mr. F. E. Bennett, A.R.I.B.A., prepared in accordance with the terms of the R.I.B.A. (Alfred Bossom) Scholarship, 1924, for the Study of Commercial Architecture in U.S.A. The subject chosen by him, and approved by the R.I.B.A., was "Apartment Houses: Good Class Flats in U.S.A."

The Report is divided into the following sections, *i.e.*, 1, Preliminary; 2, Sites and Courts; 3, Planning; 4, Other Floors; 5, Stairways; 6, Lifts; 7, Living Rooms; 8, Bedrooms; 9, Kitchen and Pantry; 10, Servants' Quarters; 11, Elevations; 12, Construction; 13, Finance; 14, Final Note; 15, References.]

In his preliminary remarks the author says:—"This Report is presented in the form of a series of notes and 72 plans, illustrations, drawings, &c. The object is to give a description of the high-class flats in America, for the information of other architects. It is not a complete study of the subject, but deals with the aspects of it which appear to be most important. The Report is arranged under 14 headings, which include one on Construction, one on Finance, and a Conclusion. The paragraph with the typical plans is the main one, and the descriptions in it are arranged so that information may be assimilated gradually. Other paragraphs are given as additional information to the one on Planning.

"The study of the subject turned out to be confined almost entirely to the two cities of New York and Chicago, and then mostly New York, for the best flats are found in these two cities. In New York there are several hundred blocks of high-class flats situated, more or less, in one part of the city. A few have recently been built in the lower end of the city. The information was collected during a period of eight months at odd times as opportunities arose; interviews were obtained with architects, financiers, 'Realtors,' building managers, and others; visits were made to existing buildings and various works under construction. Notes were made at the time or as soon after as possible so as to keep fresh records. Architects were most generous with their time and attention and gave me as much data as I wanted, and provided me with many introductions.

"The architects interviewed included nearly all the specialists in 'Apartment House' work. They were questioned and asked to criticise schemes which I had worked out. I was given every opportunity to use their offices and examine any of their drawings. I wish to record here my appreciation and thanks for the great help Mr. Bossom gave me and for the kind interest he took in my humble adventures in a strange land. Also I am very much indebted to Mr. Julian C. Levi, of New York."

In New York (continues the author) the major portion of the 7,000,000 population lives in "Tene-

The crowning Stupa with the top broken off, surrounded by a cluster of dagobs.

ment Houses." These "Tenement Houses" may be divided into two groups—those *without* and those *with* lifts. The latter class are commonly known as "Apartment Houses," and the telephone directory shows some 400 of them. Legally, a dwelling is called a "tenement house" when more than three families live in one house, under one roof, each family occupying a separate

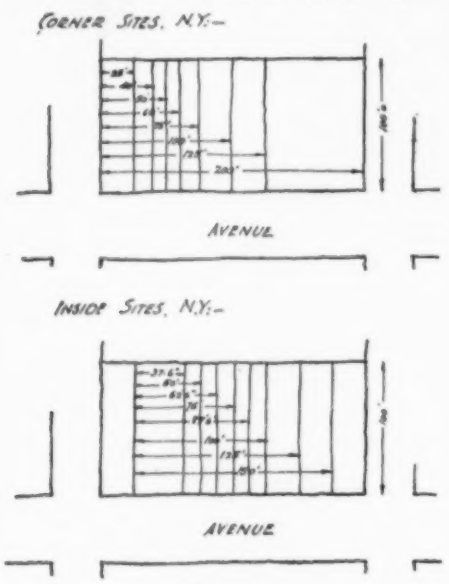


FIG. 1.

floor or part of a floor. The number of apartments in one building may be very many, and in one case is over 300, and the height of the building may be anything from 3 to 15 stories.

The laws of New York and most American cities do not recognise any difference between apartment houses and tenement houses, and both are placed under the same regulations, but the tenement house has generally come to be looked upon as the house of the poor, and the other of the rich. This Report deals with Apartment Houses only, and among those only with the highest class. The term "Apartment House" has been avoided as much as possible in preference to the English term "Flats" or "Flat Buildings."

It would be difficult to give a survey of all the good-class flats which have been built, owing to the variety, but a few typical examples have been chosen.

Buildings in U.S.A. allied to good flat buildings are: Club House Hotels—"Allertons," Apartment Hotels, Hotels, Tenement Houses.

The tallest flat buildings in New York are mainly grouped about the Central Park on Fifth-avenue, Park-avenue, Riverside-drive, and the park borders.

While these flats exist partly as the result of land value inflations, they have been made possible owing to the great developments in the efficiency of the lift.

Within a few years it is considered that the competition of the real estate market in New York will be the competition of good buildings against poor buildings. The values of old buildings have been greatly enhanced by the increase in building costs since 1915, so saving many from mortgage foreclosure. Life of a flat building is considered thirty to fifty years.

In New York the building of flats is governed by the Tenement House Law, the Building Code, and the Building Zone Resolutions.

In Chicago it is governed by the Building Ordinance and the Zoning Ordinance, which are based on the laws for New York.

SITES AND COURTS.

Nearly all sites are of true rectangular shape in New York and Chicago, owing to the grid-iron town plans. The blocks of buildings in New York are more or less constant in size and of dimensions invariably a multiple of 25 ft. For this reason and for real estate dealings, a "plot unit" of 25 ft. by 100 ft. deep is recognised. For instance, the normal type of site on Park-avenue measuring 100 ft. by 100 ft. is referred to as a site containing four units.

On a "block," then, with 200 ft. frontage, the sites occur as shown in Fig. 1.

In this Report the "inside" sites are practically ignored, as they do not provide the highest class of planning, owing to the poorness of lighting. For corner sites the law permits a maximum of 90 per cent. of the area to be built upon and 75 per cent. for "inside" sites. A court of from 10–20 ft. is required across the whole of the back (or in the case of corner sites along one side) of the site. Resulting from these laws, types of block plans are (Fig. 3):—

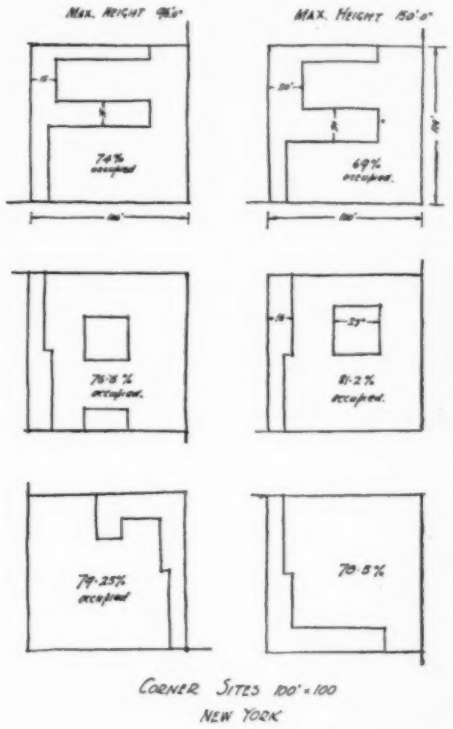


FIG. 3.

Many areas in New York are occupied by five-story buildings and others of a less height, so a tall block of flats situated among them has unobstructed views in all directions. "The angle of

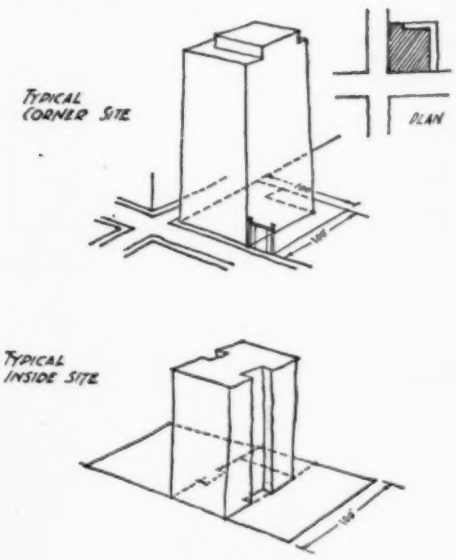


FIG. 4.

light" has a different application in American cities from English cities. New York, being some 700 miles nearer the equator, the sun reaches a higher level, and gives a steeper angle of light, making taller buildings possible in relation to the width of roads.

(To be continued.)

FIG. 2.—APARTMENT HOUSE, 620, PARK-AVENUE, NEW YORK.

REGENT STREET

By V. M. CHRISTY.

REGENT-STREET is, in several respects, a typical epitome of modern architectural tendencies. It is natural that it should be so, considering the completeness of the remodelling that has taken place there within so short a period of time. There are many fine buildings in Regent-street to-day; there are many fine parts of buildings there. Regent-street, as an architectural "sight" offers much to admire, much to enjoy, much to reflect upon. As a street with a definite unity, a character of its own, it died during the last few years. Because the distinctive individuality of the *old* Regent-street as a whole was so marked, the absence of such a quality in the new is particularly manifest. The new street does not lack distinction: far from it; it is, in fact, one of the most distinguished of our streets. But it is a union, not a unity; an aggregation of sumptuous and cleverly designed buildings, rather than an apparently natural society of mutually interested units actuated by a single aim. There *is* a common aim in Regent-street to-day, but that aim is the sum of the aims of the component parts. The spirit of advertisement, one of the prevailing spirits of the age, is here expressed in its most refined, æsthetic, and intellectual manner. It may be remarked in passing that perhaps never before has a street as a whole been known to advertise itself in the press as does Regent-street now.

One of the first impressions created by the street architecture of this almost totally new street is that the parts make up the whole, rather than that the whole is compounded of contributory lesser parts. The small makes up the greater, and announces the fact with trumpet blasts, without waiting to be first perceived as a result of close analysis of the whole effect. This tendency is a reflection of the age, when the *individual* has become so evident a component of the community. It is questionable whether this accentuation of the smaller parts produces such real satisfaction in beholding a fine street, as did the older hierarchy of parts. It would, perhaps, border on exaggeration to suggest that Regent-street to-day is an essay in the magnification of the unimportant; but such a phrase expresses something of the tendency which is evident in it. Dormers, ventilators, roof-ridges, window sills enter into a conspiracy to dethrone the greater masses from pride of place. Nevertheless, there is, with all this emphasis on the lesser parts, a complete absence of gimcrackery or trumperiness in this long stretch of buildings, so near to one another physically and so far apart in spirit. There is moreover a very marked display of opulence, combined with imaginative and structural skill, operating within the set of limitations and opportunities peculiar to Regent-street.

It is rather as a mirror of the age that Regent-street must be approached, than as a street with such individuality, almost personality, as one may find in other streets. Nash's street was also a mirror of his age, but it possessed character as a street as well. When one has accepted the fact that the new Regent-street is no longer capable of being judged as a complete whole in the same way that other streets can be judged and appreciated, one prepares to consider the buildings on their individual merits, rather than in relation to one another. As individual buildings many are interesting, pleasing or striking, while some challenge to a reconsideration of preconceived values. Perhaps the tendency to magnify the unimportant is among the revaluations that have least right to survival; but some of the new values suggested are undoubtedly true ones, arising as they do out of new purposes, new materials, new methods, and new outlook.

Among other indications of modern architectural thought here expressed is a remarkable catholicity. It is astonishing how wide a range of "styles" the street admits into its congregation. What could be more widely divergent in conception (to mention four of the most conspicuous among the newcomers), than the Quadrant series, Liberty's, Vigo House, and the Plaza Theatre? Were those the only members of the company they would offer a fair sample of the diversity in practice and manner which finds expression in buildings of to-day. Roughly speaking, there exist in Regent-street two fairly distinct groups or phases of architectural expression, though the two are at times inclined to merge imperceptibly. There is the uncompromising method, presenting almost unadorned masses and shapes, both to express structure and to create interest and character; and there is the other type, which at first sight seems to follow "tradition," in a narrow sense, more closely, and yet contravenes innumerable laws and customs of tradition, and at times may appear a little illogical. It is especially in this second type that there is noticeable a curious striving in the subsidiary parts of the façade to get above and beyond themselves. Each member of the cast seems anxious to play other parts as well as his own. Thus, a dormer endeavours to be a large and important window; a roof ridge seeks to appear as a notable portion of the elevation; a window-sill blossoms into a balcony, although the position of the window it serves has no warrant for such assertiveness. Just as the street is composed of many divers associated parts, without evident unity, so it is with many of the buildings. There is about some of them an indication that they are "nervy" rather than "nervous" in the sense of alert vitality. This disturbing state of things is very considerably mitigated by the fact that the individual parts and details are supremely good in design and workmanship. Moreover, the blocks which compose this array of divers buildings show an obvious regard in small particulars for the idiosyncrasies of their neighbours. There is symmetry, balance, a degree of concurrence between various portions of the street.

As a result of the interacting restraints, needs and opportunities, one of the striking features of Regent-street is its dormers. Not only are they remarkable for their number, but also for variety of treatment. Besides the more familiar changes rung on curved and gabled pediment effects, there are combinations of flat-topped, round-topped, single, double, treble grouping, besides the endless variations in size, position and spacing. The breaking up of the skyline from certain viewpoints is entirely due to dormers. From other aspects the grey mass of roof almost presents the illusion of a dark subsidiary sky. Indeed, roofs as well as other parts seem afflicted with the tendency to aspire to play a higher rôle than is theirs by nature.

The long curve of the Quadrant block is notable for many things, not least for the fact that it alone endeavours to enshrine something suggestive of the street that is now demolished, although it is so utterly different from it. It attempts to indicate the idea of unity, and in so doing at any rate achieves the linking-up of the three portions of the street one with another, and, above all, it retains the continuity of the old Quadrant sweep, although it does so under difficulties. The expedient of bridging the intervening side streets with those huge arches surmounted by columns, emphasises the continuity and makes a virtue of necessity. Descending Regent-street from Oxford-circus, part of the curving line of the Quadrant is first seen in the strange guise of a terminal point of a vista, and above it there slowly recedes the inquisitive spire-top of St. James's, Piccadilly. But because this magnificent range is really *not* a terminal block at all, the impression from the upper part of the street is wrong, the observer's ideas have to be swiftly readjusted to take in the fact that it is really a continuous curved line, which very gradually unwinds into view as it is approached. The handsome lines of Vigo House detract from the clear sweep of the curve, because they exert a backward pull upon it. And so it happens that on that side of the street the grand Quadrant sweep hardly gets a fair chance, for it is pulled back at the start by the verticality of Vigo House, and its course is later impeded by the Piccadilly Hotel. It should be noted here that the younger building carries on the sequence and continuity of the Piccadilly Hotel with a courteous gesture of *seniores priores* in matters of choice where no basic principle is involved. There is a degree of relentlessness about the cornice of this long curve on the two sides, but the stern lack of repose in it has a reason; for it is the quality of urgent movement that is so striking about this stretch of street. There is sufficient firm anchorage about the simple rusticated piers at the ground floor, and then by easy degrees the feeling of movement begins. There is the plain space for the shop name, then the clever balcony with enriched centre and gilded baskets of fruits, which subtly catch the eye, and direct it upward to the greater portions of the composition, as does also the ladder-like suggestion of the masonry of the piers. Apparently resting on the top of the piers is the first continuous lateral line. It is broken only where the great arches come, but broken in such a manner that it loses no momentum. In fact, the turbulence of the arch seems to toss it onward from one rock to another. Then, having thus traversed the intervening space, its impetus is increased. Thus launched, it continues its career into the "straight," or rather into the uninterrupted curve, till it shoots another rapid at the next arch. Above this line comes the main part of the façade with its interesting monotony of small-paned windows, cut as it were in the sheer wall face, and only slightly emphasised. The unmoulded strips at the windows supply yet another unobtrusive line to persuade the eye upward. And this time it is to the great cornice, whose sweep does not break or waver. Indeed, it continues a supplementary existence in Lower Regent-street after picking its way across the Circus.

Vigo House is especially interesting as being a modern expression of modern materials and methods. It has about it something of the almost metallic hardness and severity which is natural to any building expressive of steel and concrete. But, unlike some of its contemporaries, it is neither stark nor forbidding. There is, on the contrary, a humanity, a certain fine courtesy, about this restrained, closely-knit block. It is direct but by no means harsh.

Liberty's building has taken its place unquestionably as one of the most magnificent commercial monuments of London. With such a striking neighbour it is small wonder that some of the less conspicuous buildings dating from a little longer ago, appear somewhat smug and unimaginative, and others deck themselves rather forlornly with sulky cherubs or misplaced weapons of war. In the lower portion of the street it is small wonder that there is a desolate and tarnished appearance about the coronetted little two-story bays that survive from the older street, seeing the splendour of their changed surroundings.

Regent-street, by the very spaciousness of its new width, proclaims itself a thoroughfare, a busy street of traffic passing through. Yet more than ever before it is a goal in itself. Moreover, in Regent-street to-day men and women comment upon its architecture as upon no other street architecture in London.

Surveyor's Estate.

Mr. Joseph Henry Sherwin, of "The Cottage," North-side, Wandsworth Common, London, surveyor (net personalty, £17,603), left £25,112

PARTHENON STUDIES*

By W. R. LETHABY.

I.—BRITISH SCHOLARSHIP BEFORE 1800.

"The pride of Athens and the boast of Architecture."—WILKINS.

To comprehend what is known and believed of the Parthenon at the present time, it is desirable to understand how the results of critical study have been reached. It has taken some two hundred and fifty years of observation and argument to gain our present appreciation of the building and the meaning of its sculptures.

Although not a hundredth part of what has been written may have been both new and true—all the rest being recapitulation—yet hardly anyone has really studied the wonderful stones without contributing something of value in explaining them. It would be informing to have an account of the building compiled by bringing together all that seems to have been freshly observed and said for the first time in the words of the several original records.

A short and inadequate outline of even the observations of British scholars in Athens is all I can now undertake. A comprehensive study, however, of British contributions to Greek archæology over the whole field would be a stimulating piece of work, and I venture to suggest such a survey to some student in search of a task. Our travellers made similar contributions to the study of the classical antiquities of Asia Minor and Sicily as they did for those of Greece. The best account of what we have done is given by the German archæologist Michaelis in his delightful book, *A Century of Discoveries*, in which he says: "The promised land of Greek Art was revealed here by British energy." My purpose in attempting this record of our past work is not to make any boastful claim, but rather by way of reproof to more recent slackness.

The foundations of our modern interest in Greek art were laid down more than three hundred years ago while Shakespeare was yet alive. Henry Peacham wrote: "I cannot but with much reverence mention the every way Right honourable *Thomas Howard*, Lord high Marshall of *England*, as great for his Noble Patronage of Arts and ancient learning, as for his birth and place, to whose liberal charges and magnificence this angle of the World oweth the first sight of Greek and Roman Statues, whose admired presence he began to honour in the Gardens and Galleries of Arundel House about twenty years ago, and hath ever since continued to transplant old Greece into *England*. . . . And some of the Old-Greek marble bases, columns and altars were brought from the ruins of *Apollo's* Temple at *Delos*, by that Noble and absolutely compleat Gentleman, Sir *Kenhelme Digby* Knight." (*The Compleat Gentleman*, 1634.)

The excellent work long ago done by our travellers and students has for the last fifty years been somewhat overlaid by more modern speculation, and neglected here in favour of the new-fangled and the foreign. We especially seem to lack cohesion and continuity in these things and prefer to quote foreign scholars rather than our own. This is a mistake, for besides the point of justice, our own powers seem to wither and we become doubting and timid.

If advances are to be made, risks must be taken, but usually we do not like taking risks and frequently prefer to cling to an outworn theory for which we are not responsible. The scholarship of art is largely a game and for it what is most required is general alertness and interest. When observations are made, even by the most unlikely outsiders, they should be welcomed and considered. The tide of interest must either flow or ebb.

. . . . . .

Francis Vernon.—Between 1670 and 1680 Athens was visited by several scholars, and from this time dates our modern knowledge of the Parthenon. In 1674, a competent foreign artist working for the Marquis de Nointel made a most valuable series of drawings of the sculptures, but for a long time these indispensable records preserved in Paris were not published. Randolph—an English traveller—was in Athens about the same time and in 1675 it was visited by Francis Vernon, who seems to have been the first to take accurate measurements of the Parthenon. Vernon was a remarkable man "possessed with an insatiable desire for seeing." He went from Venice to Greece, examined the ruins of the temple at Delphi, and visited Thebes, Corinth, and Sparta as well as Athens; he travelled on to Persia, where he was murdered. In January, 1675-6, Vernon wrote an account of Athens, which was printed in *The Philosophic Transactions* of April in the same year. Randolph's book did not appear until later and the measurements which he gives are evidently taken from those made by Vernon, who wrote thus: "At Athens I have spent two months. Next to Rome I judge it to be the most worthy to be seen for Antiquities of any I have yet been at. The Temple of *Minerva* is as entire as the *Rotunda* [or Pantheon]. I was three times in it and took all the dimensions with what exactness I could. . . . The length of the *Cella* or Body of the temple without side is 168 feet English; the breadth, 71. These measures you may rely on as exact to ½ a foot. The *Portico* of the *Dorique* order, which runs round it, hath 8 pillars in front, 17 on the sides; the length of the Portico is 230 feet English. I have taken all the dimensions within, with those of the προνάος and the Portico's, but they are too long for a letter. The *fuste* or shaft of the Pillars is 19½ feet in circumference. The *Intercolumnium* 1½ of the diameter of the pillars. . . . About the Cornice on the outside of the Temple of *Minerva* is a *basso-relievo* of men on horseback, others in Chariots; and a whole procession of people going to a sacrifice, of very curious sculpture. On the Front is the history of the Birth of *Minerva*."† The dimensions must have been carefully taken. Penrose gives the length on the top step of the platform of the peristyle as 228.3 feet; the description of the frieze is excellent.

George Wheler.—The Temple and its sculptures were more fully described by the Frenchman Jacob Spon, and his English companion, George Wheler, who visited Athens in 1676. Spon speaks of Vernon as having been in Athens six months earlier, and also of the drawings made for the Marquis de Nointel, with whom he and Wheler compared notes in Constantinople.

Wheler's book is mainly an English translation of Spon's French text, but the earlier volume must to some extent have been shaped by the observations and conversation of both the travellers. I condense Wheler's account of the western pediment; his description of the "prauncing" horses of Athena's chariot is fuller and more vivid than Spon's. In a few years these horses and much else in the pediment were destroyed and the written word is a valuable commentary on the drawings of Nointel's artist. At this time it was understood that the sculptures represented the Birth of Athena, whereas the subject was the dispute between Athena and Poseidon for the guardianship of Attica.

"A figure stands in the middle, having its right arm broken; its legs straddle; its beard and the majesty expressed in his countenance show it to have been Jupiter [Poseidon]. At his

FIG. 1.—PART OF SOUTH FRONT. R. DALTON, 1749.

* I have been drawn to the study of the Parthenon by the sculptures and architectural fragments in the British Museum, and my purpose here is to bring out little observations, and put together notes made during the last thirty years. The best entry to Parthenon studies is a visit to the Elgin Gallery with the admirable 6d. "Guide" sold at the Museum.

† This account is extracted with others in *De Parthenon*, by Michaelis.

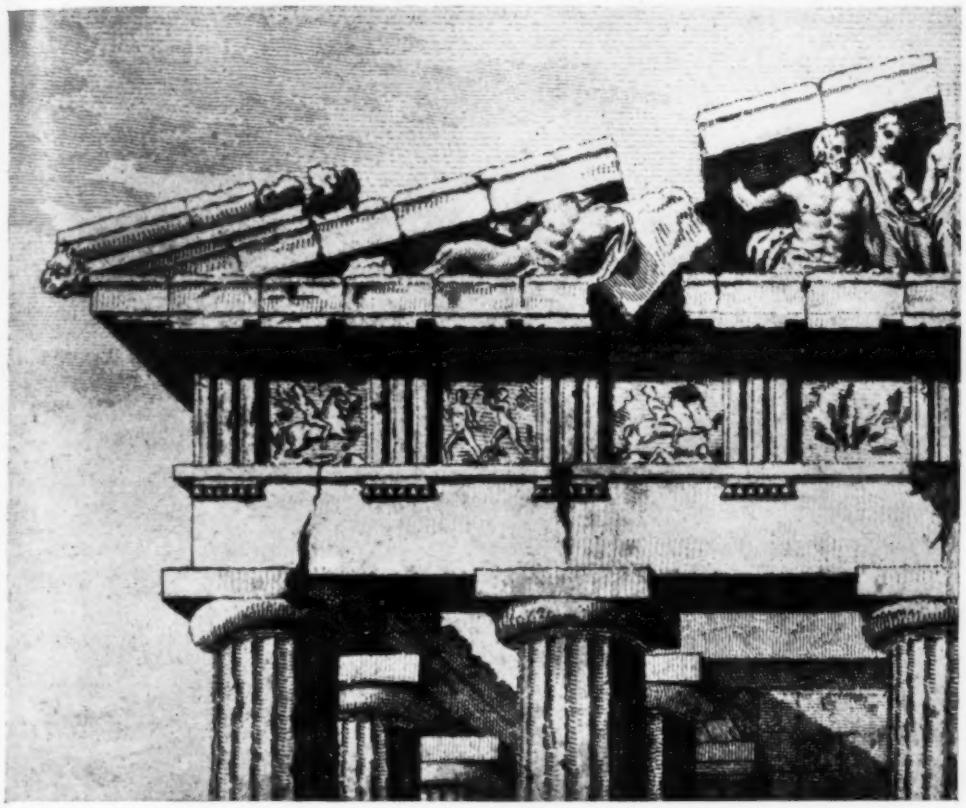


FIG. 2.—PART OF WEST PEDIMENT. R. DALTON.

right hand is another figure with its arms broken off, covered down half-way the leg, coming towards Jupiter [Poseidon]; perhaps a Victory [Athena] leading the chariot of Minerva. The horses are made with such great art that the sculptor seems to have outdone himself by giving them a more than seeming life; such a vigour is expressed in each posture of their prauncing and stamping, natural to generous horses." When, in an attempt to remove it, the chariot group just described on the left-hand side of the west pediment was destroyed by the Venetians about a dozen years later, the figures of Athena and Poseidon seem still to have remained for a time in the centre of the pediment.

Pococke.—The state of the west front in 1737–8 was described by Pococke. His account is confusing as the figures were mentioned in inverse order, but it becomes clear on comparing it with Dalton's careful view drawn in 1749. Pococke says: "I saw in the pediment one naked figure sitting [Furtwängler's Ion on the right]: two clothed [next towards the centre]; a woman in posture of walking [Iris]; all without heads; two bodies in the middle, one standing [Athena and Poseidon]; Hadrian [Cecrops] sitting with a woman; and a naked figure fallen down [or rather reclining in the left-hand angle]." Three of the figures described as without heads had not lost them when Nointel's drawings were made; one of the "two bodies in the middle" seems to have fallen over on the cornice.

Pococke also noted in the eastern pediment—"Head of a horse [of Helios]; a naked man sitting fallen down [Dionysos]; two men [*sic*] sitting, their heads being broke off [Demeter and Persephone]; one like a woman flying [or rather startled], the head likewise gone; the middle part [of this pediment] all destroyed; and on the other side there only remained three broken figures" [the "Fates," two of which still retained their heads in 1674; the first of the three figures seems to have fallen soon after Pococke saw them].

Lord Sandwich, on tour in 1738–9, visited Athens with a tutor, and it was noted of the Parthenon: "Several of the statues lie on the ground broken to pieces by the fall."

Richard Dalton.—Dalton, just mentioned, was an artist employed by Lord Charlemont (born 1728) to accompany him when he made the grand tour on becoming of age. Charlemont seems to have projected a work of research and record. In Hardy's *Memoirs of the Earl of Charlemont* it is said of Dalton: "as an artist he was miserable, but exact and faithful." Dalton made his drawings of the Partheon in 1749, and his plates were etched in 1751 and ready for publication in 1752; then there was some quarrel with his patron and later the artist issued the plates himself. They have sometimes been spoken of slightingly, but the prints show such accuracy of observation that the original drawings must have been remarkably delicate. Dalton at one time was Librarian at Windsor Castle, and I wonder if his drawings are preserved there. Lord Charlemont became a person of political importance; he was made a member of the Society of Dilettanti in 1756 and died in 1799. Possibly his notes of travel still exist in MS.

Dalton's plate of the "Theseum" is dedicated to Lord Charlemont: "This work, intended to illustrate the Antiquities of Greece and undertaken and finished under his Lordship's direction . . . published April 12th, 1751." In 1752 a prospectus was issued of the *Museum Græcum et Ægypticum*. This states that Mr. Dalton was engaged to make the drawings by "a very sensible and worthy young nobleman, the Lord Viscount Charlemont, who saw how imperfect all books of travel . . . had been by the want of accurate drawings. The first part consists of twenty-three plates and relates almost wholly to Athens. . . . This part is already published."

Lord Charlemont's party visited Halicarnassus. "Here they found several very valuable relievos which are probably part of a frieze in the Mausoleum. The subject is the battle of the Amazons." Dalton drew and etched these also. In a complete edition of his plates, *Antiquities and Views in Greece and Egypt*, 1791, we are told that when the Mausoleum prints were issued, "the editor at that time found himself much deceived and was obliged to abandon further publications, as the whole cost fell on himself." At Halicarnassus a large round altar was discovered; "the subject is an ancient marriage." ". . . On the Sigæan promontory they met with two pieces; one is the portrait of a young Greek holding a scroll, the other is a sarcophagus on which are women with newly-born

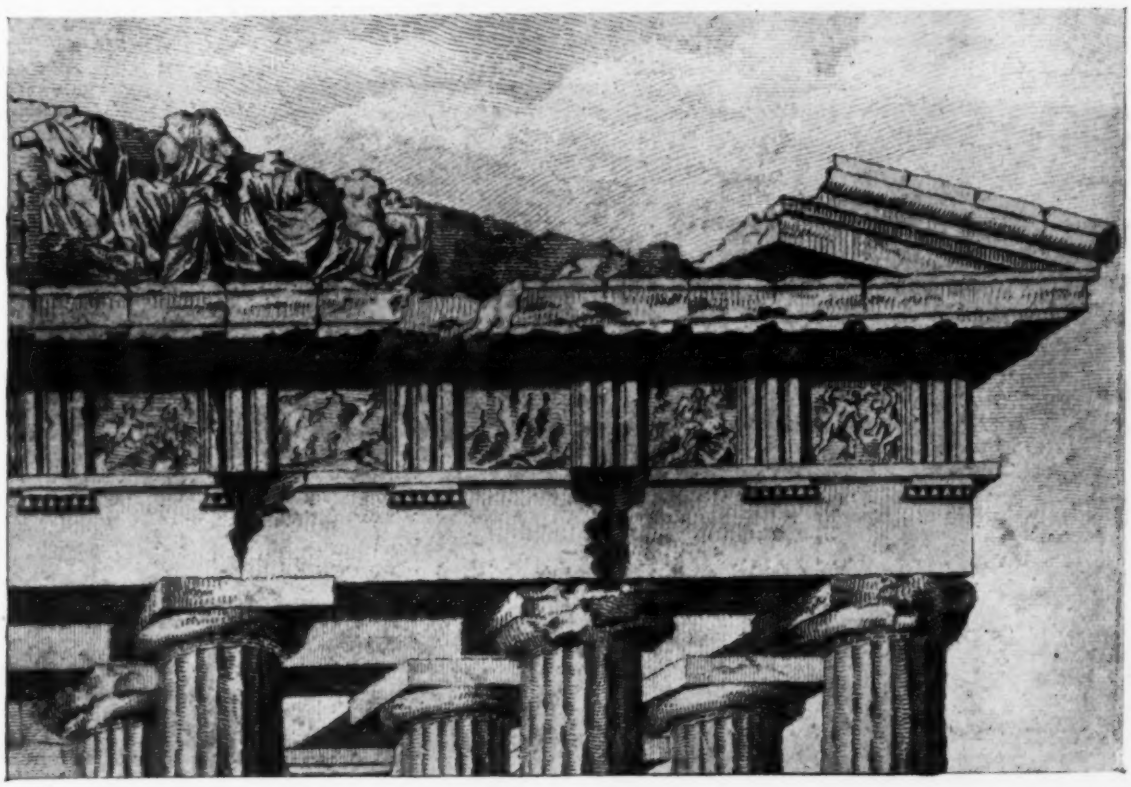


FIG. 3.—PART OF WEST PEDIMENT. R. DALTON.

children in their arms returning thanks to the goddess Lucina." This and the altar are now in the Museum.

In the History of the Society of Dilettanti it is observed that Dalton "made several drawings of Athenian antiquities, but they are of little value for art or archæology." This, I think, is a mistaken view. Dalton's work was a credit to English art, being some of the most exact of architectural records up to that time published. One of the purposes of this chapter is to render recognition to Richard Dalton, whose name is not recorded in the *Dictionary of National Biography*.

Dalton's plates included a plan and views of the Parthenon. On the plan is recorded for the first time the facts that the intercolumniations next the angles are less than the others, that the outer columns have twenty flutes, and that the inner rows of columns at the ends had eighteen. The forms of the details of the building might really be understood from these careful drawings. The facts that the epistyle was made up of three parallel stones, and that its heading joints went through the *regulae*, are recorded.

His view of the west front shows that the two figures next the right-hand angle of the pediment had fallen out; the draped female on whose lap the nude figure was seated was not turned at such an angle as Nointel's artist indicated, but generally Dalton confirms the accuracy of the latter. Dalton shows a complete woman's figure next the Cecrops' group. That this figure was not mentioned by Pococke is evidence that it was an imaginary restoration of a broken fragment Pars saw there in 1765. A large part of the body of Athena lay on the ground and a portion of the lower part of the nude body of Poseidon was also on the ground, while the upper part of the body seems to have remained on the cornice together with the torso of Hermes. The "gap" near the left-hand angle is recorded as by Nointel's artist. Obviously a figure must once have filled it (Figs. 2 and 3).

Another view of part of the south front gives the general scale and feeling with great truth. The metopes here are so accurately drawn that their condition at the time can be made out. Even the fact that parts were detached from the ground is evident—a woman lifted from the ground by a Centaur has her feet dangling helplessly from the skirt of her drapery. Several plates represent the western frieze at a larger scale, and in these some details now lost are recorded.

Robert Wood and James Dawkins, returning from their explorations in Egypt, Palestine, Syria, and, above all, Palmyra, in 1750-51, spent three weeks in Greece. Some of their notes and sketches have recently been presented to the Society of Hellenic Studies, but there are none, unfortunately, regarding Athens.

Stuart and Revett. — In this same year Athens was visited by two British artists on their own initiative—James Stuart and Nicholas Revett. Stuart was born in the City of London, the son of poor people; he became a painter and quite a learned person. Two sketches of his life given in Vol. 78 of the *Gentleman's Magazine* at the time of his death show that he must have been a man of remarkable powers and persistence. Revett was the son of a Suffolk landowner and he also began as a painter. In 1742 these two young men had gone to Rome, the former travelling there on foot. In 1748 they made a walking expedition to Naples in the company of Brettingham and Gavin Hamilton. It may have been during this tour that the project of a journey to Athens was mooted.

Stuart, in the Introduction to *The Antiquities of Athens*, says: "We were at Rome and there, towards the end of the year 1748, I first drew up a brief account of our motives for our undertaking this work." This Introduction is signed by Stuart only; he assumed and held the lead so fully that I can only here use his name for what must have been largely joint work.

At the Institute of Architects is a small vellum sketch-book used by Stuart in Italy. It contains several small landscapes, some drawings of architecture and notes for a treatise on painting, with very systematic observations on reflections, &c. There are references to Venice and Verona; of the former, he noted: "The plaster floors of Venice are composed of powdered brick, powdered marble and lime; when dry are polished." At one end of the book is the memorandum: "Names of the gentlemen who have promised to subscribe our Attica—Lord Malton, Lord Charlemont, Horace Mann," &c., &c. Among the other names is John Revett, of Brandiston, Esq., presumably the father of his companion.

It is clear that Stuart and Revett knew of Lord Charlemont's interest in antiquities, and it may have been a rumour of what he and Dalton were to do that turned Stuart's mind towards the Acropolis and the Parthenon. Being thus supported and doubtless financed, the friends left Rome for Venice in March, 1750. There they met Sir James Gray, who nominated them for membership of the Society of Dilettanti—a very exclusive body—to which they were elected in 1751. They arrived in Athens on March 18 of this same year and remained there until the end of 1753.

In 1762 the authors were able to publish the first volume of *The Antiquities of Athens*. "The success of the volume was instantaneous Stuart found himself famous and was afterwards known as Athenian Stuart. 'Grecian gusto' became the fashionable craze of the moment. It is from the publication of this volume that the modern study of Greek archæology may be said to date."

The Parthenon was not dealt with by Stuart and Revett until their second volume appeared about 1788-90 (it is dated 1787). It was only issued after Stuart's death, with a preface by his widow, who tells that "Mr. Stuart, having been infirm for some years preceding his death, left his papers in great confusion."

Chandler and Pars. — In the meantime, the Society of Dilettanti sent out another Greek expedition to Asia Minor in the charge of Richard Chandler, the scholar, with whom was Revett and William Pars, an able young painter. They left England, June 9, 1764, and were in Asia Minor until August 20, 1765, when they returned to Athens, where they remained until June 11, 1766, and completed some of the work Stuart and Revett had left unfinished. Towards the end of the year they laid their results before the Society; these included "a great variety of views and drawings of *basso-relievos* of the Temple of Minerva at Athens [the Parthenon] by Mr. Pars, which appear'd to the Committee to be done with Taste and Accurateness." Chandler brought some fragments of sculpture and "a very Curious Inscription relating to the architecture of the Temple of Minerva." (Really of the Erechtheum.)

Chandler's account of the Mission was published in 1776, so his observations on the Parthenon should be taken before Stuart's.

Of the principal sculptures of the Parthenon, Chandler only mentions "Hadrian and Sabina" [Cecrops and daughter] at the west end and "a head or two of sea horses with some mutilated figures" at the east. The subjects of the metopes were identified as the battle of Centaurs and Lapiths.

The subject of the frieze was rightly described: "On the frieze in *basso-relievo* the solemnity of a sacrifice to Minerva, of which the greater part is in good preservation, containing a procession on horseback. On two stones which have fallen are oxen led to sacrifice. On another, fourteen feet long [from the centre of the east front] are the Virgins which assisted at the rite . . . with other figures—one a venerable person with a beard reading in a large volume [the folded cloth], which is partly supported by a boy. This piece now inserted in the wall of the fortress is supposed to have ranged in the back front of the Cell. The sacrifice designed to be represented was probably that performed at stated times by the Athenian cavalry."

(To be continued.)

OUR ILLUSTRATIONS

[Descriptions of the illustrations which we give this week will be found on pages 86 and 87. General News and Competition News are on page 81, and Correspondence is on page 82.]

Flatford Mill.

Flatford Mill, the birthplace of Constable at East Bergholt, Suffolk, has been presented to the nation by Mr. T. R. Parkington, of Ipswich, Willie Lott's cottage adjoining the mill, which was also closely associated with Constable's boyhood, is included in the gift. Constable started life as a general helper to his father, who owned the mill. At the age of 23 he definitely adopted art as a career, and painted most of his best pictures in the neighbourhood of his birthplace.

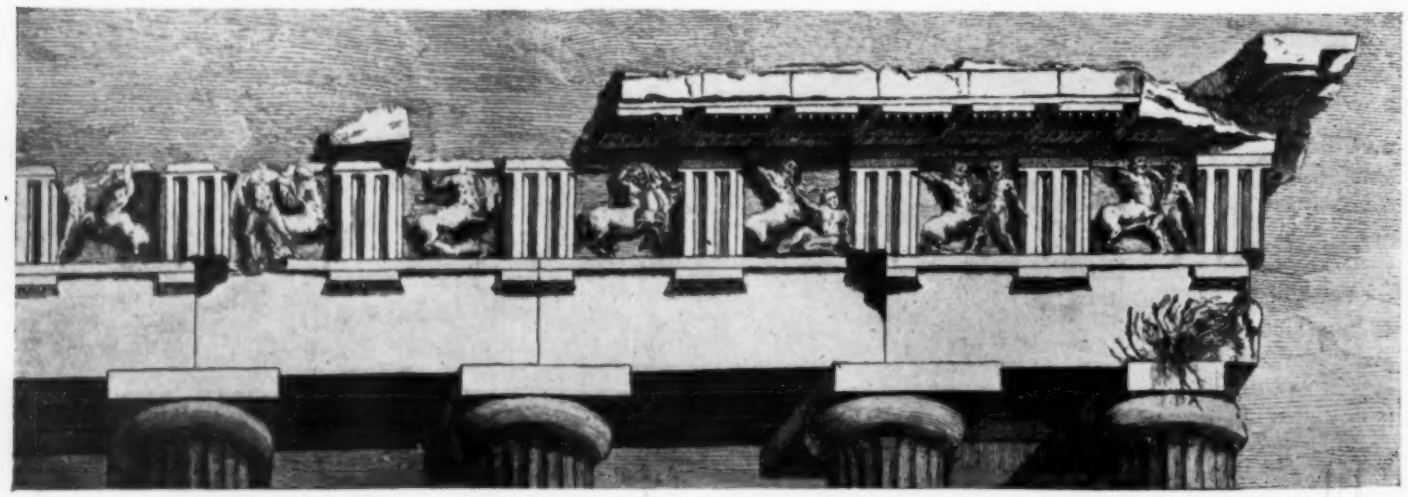
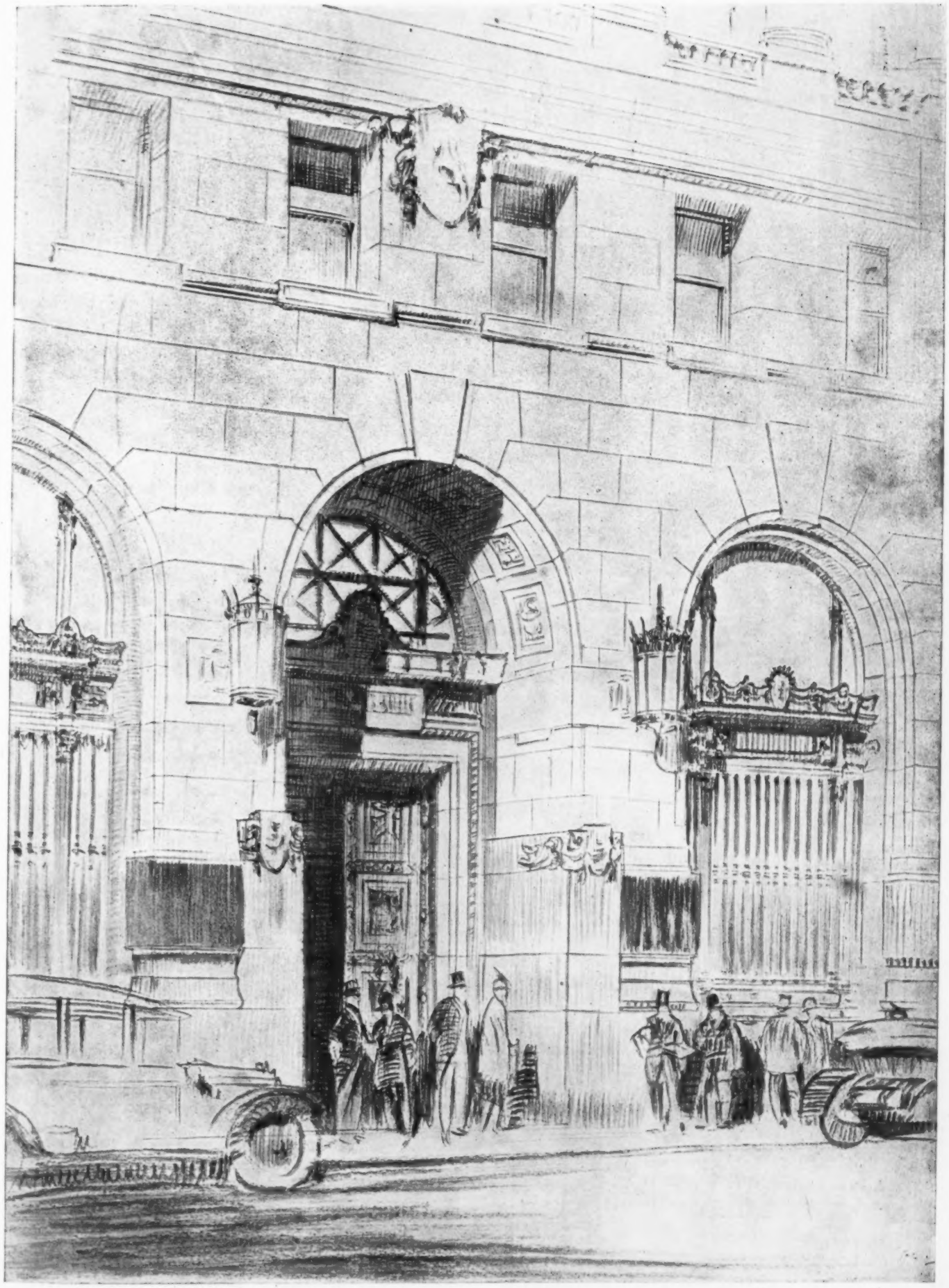


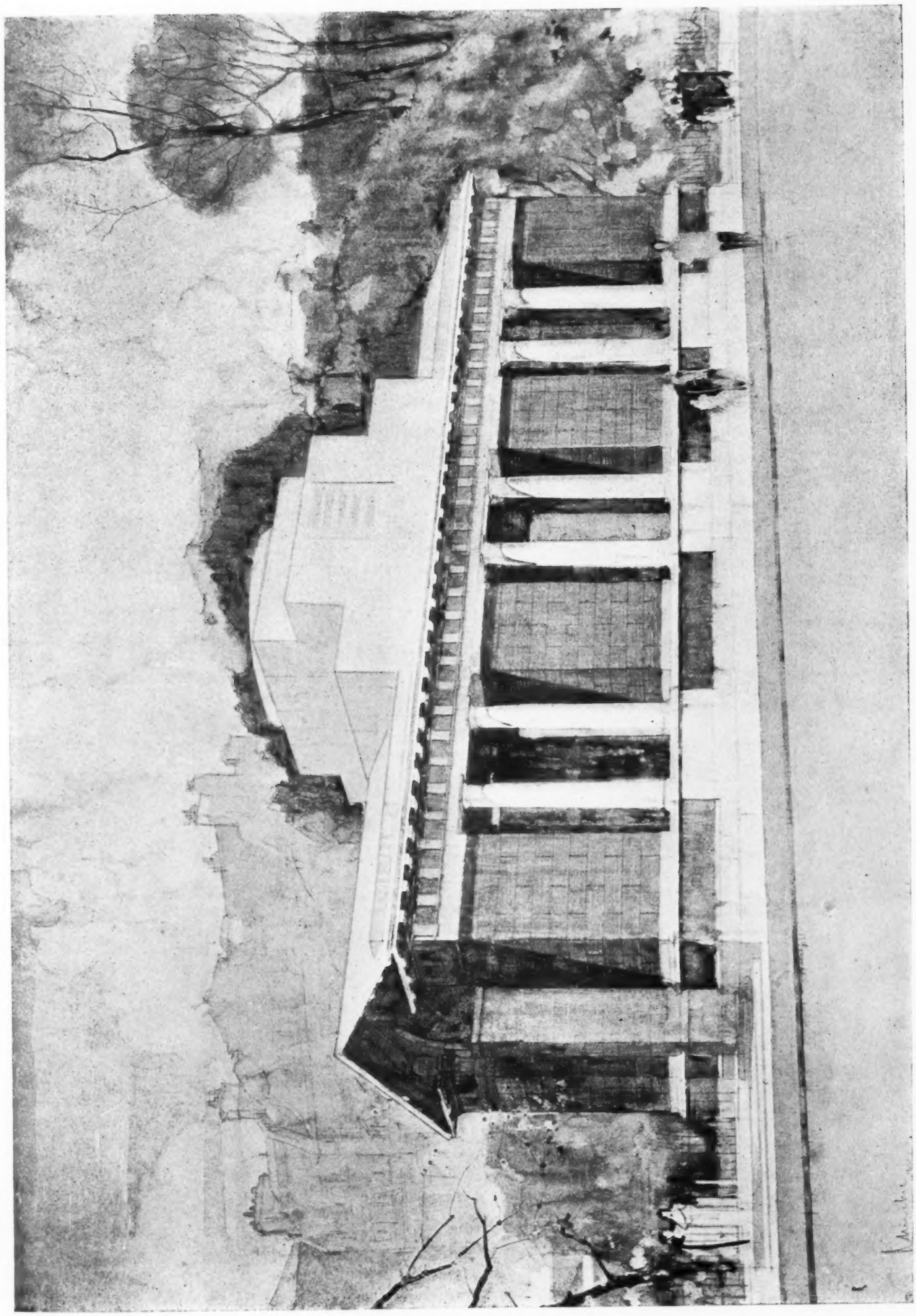
FIG. 4.—METOPES OF SOUTH FRONT. R. DALTON, 1749.



New Headquarters for Lloyds Bank, Cornhill and Lombard-street, E.C.: Entrance Doorway in Cornhill.

SIR JOHN BURNET & PARTNERS, and MESSRS. CAMPBELL JONES, SONS & SMITHERS, Associated Architects.

UNIV. OF MICH.



The Mercantile Marine Memorial, Great Tower Hill, London. Sir Edwin Lutyens, R.A., Architect.

UNIV. OF MICH.

New Church, Ampleforth Abbey, Yorks: View of Choir, showing High Altar and Reredos.

SIR GILES GILBERT SCOTT, R.A., Architect.

UNIV. OF MICH.

High Altar and Reredos, New Church, Ampleforth Abbey, Yorks.

SIR GILES GILBERT SCOTT, R.A., Architect.

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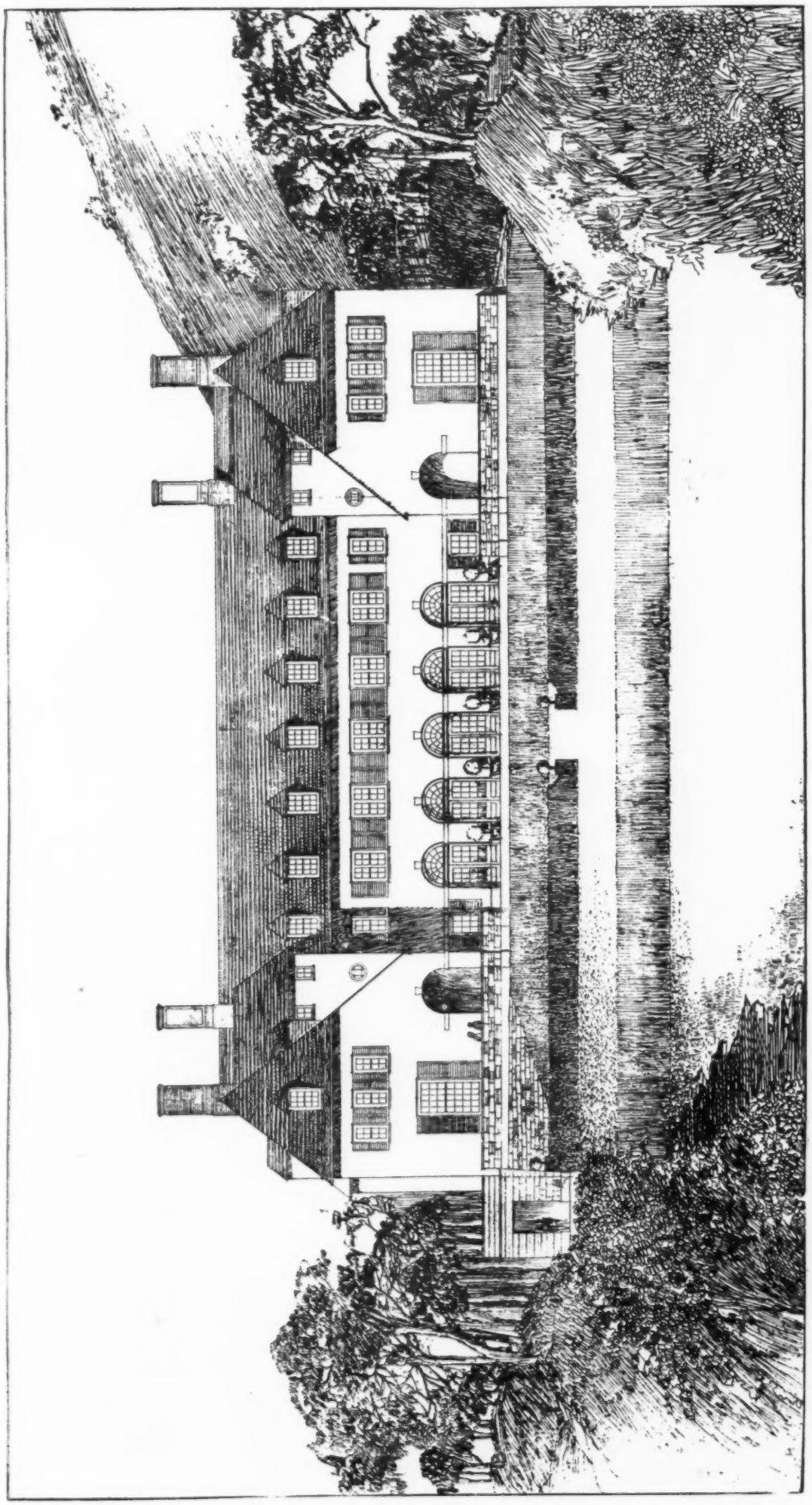

Star and Garter Home, Sandgate, Kent. Sir Edwin Cooper, Architect.

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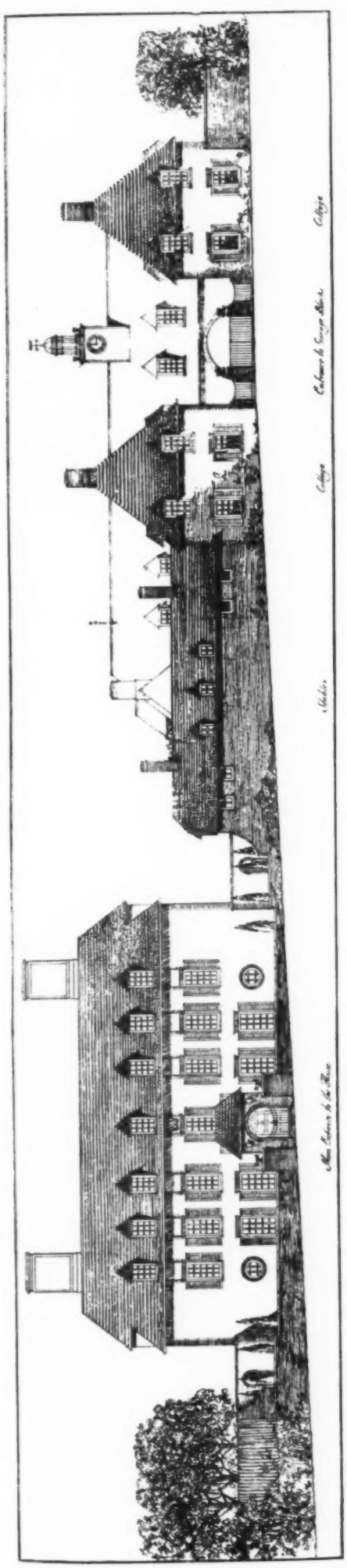
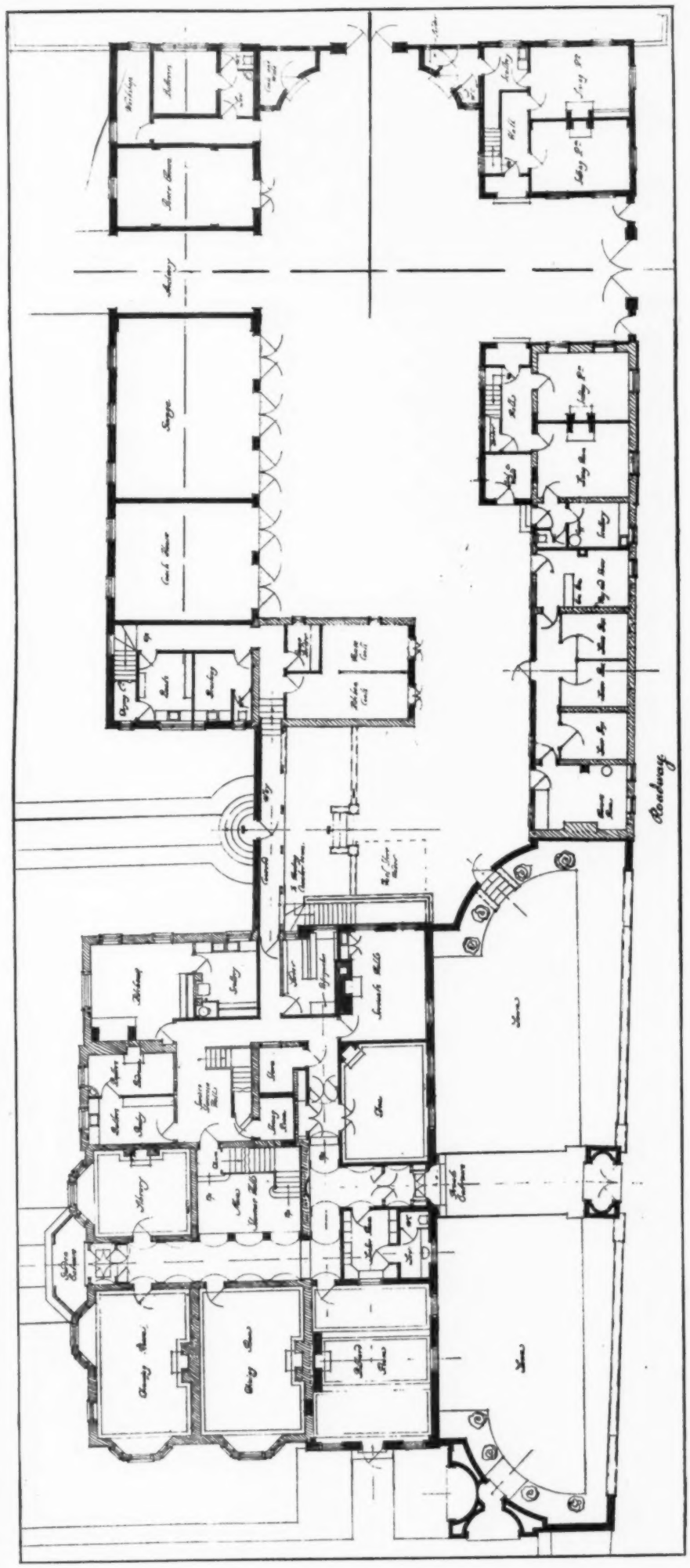
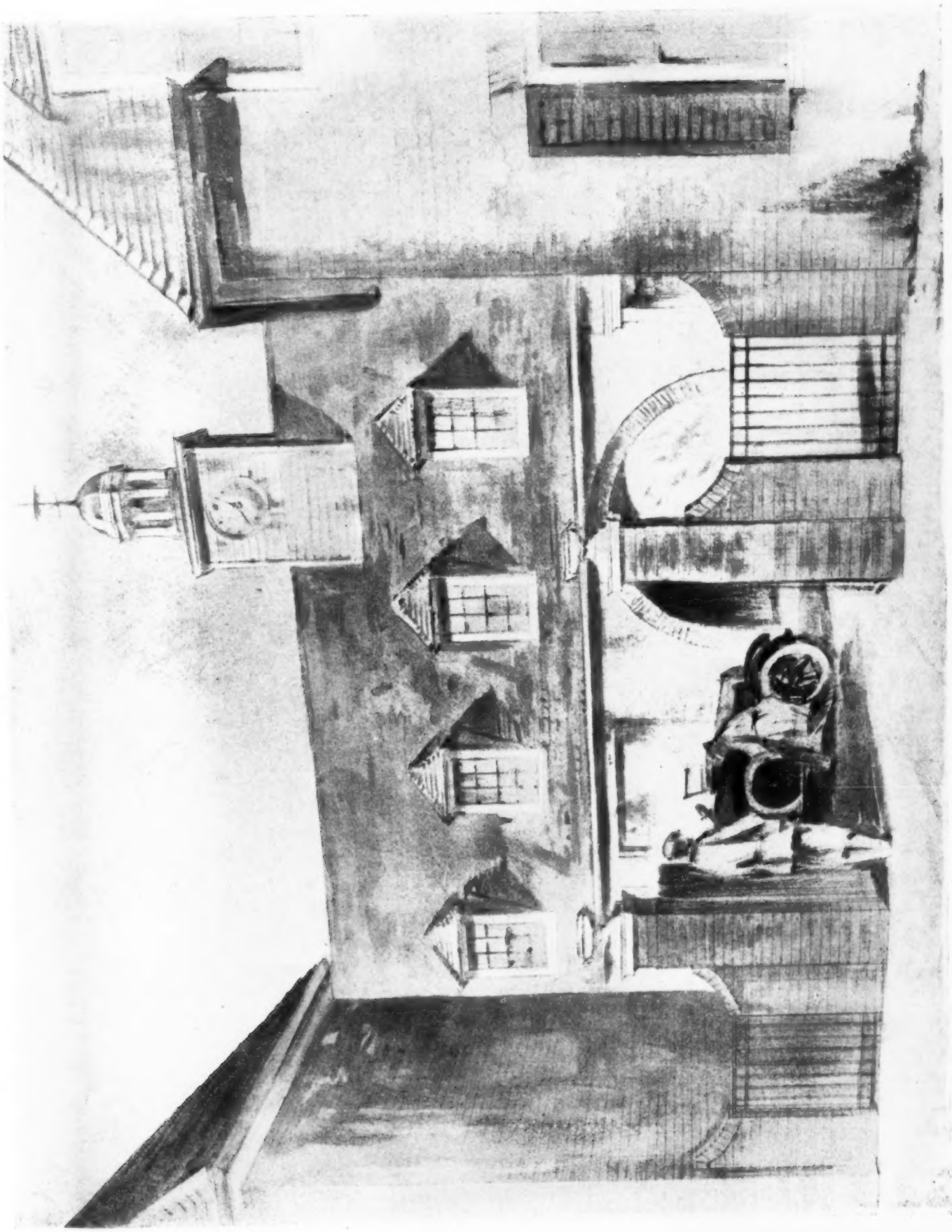




Forestridge, Sussex.

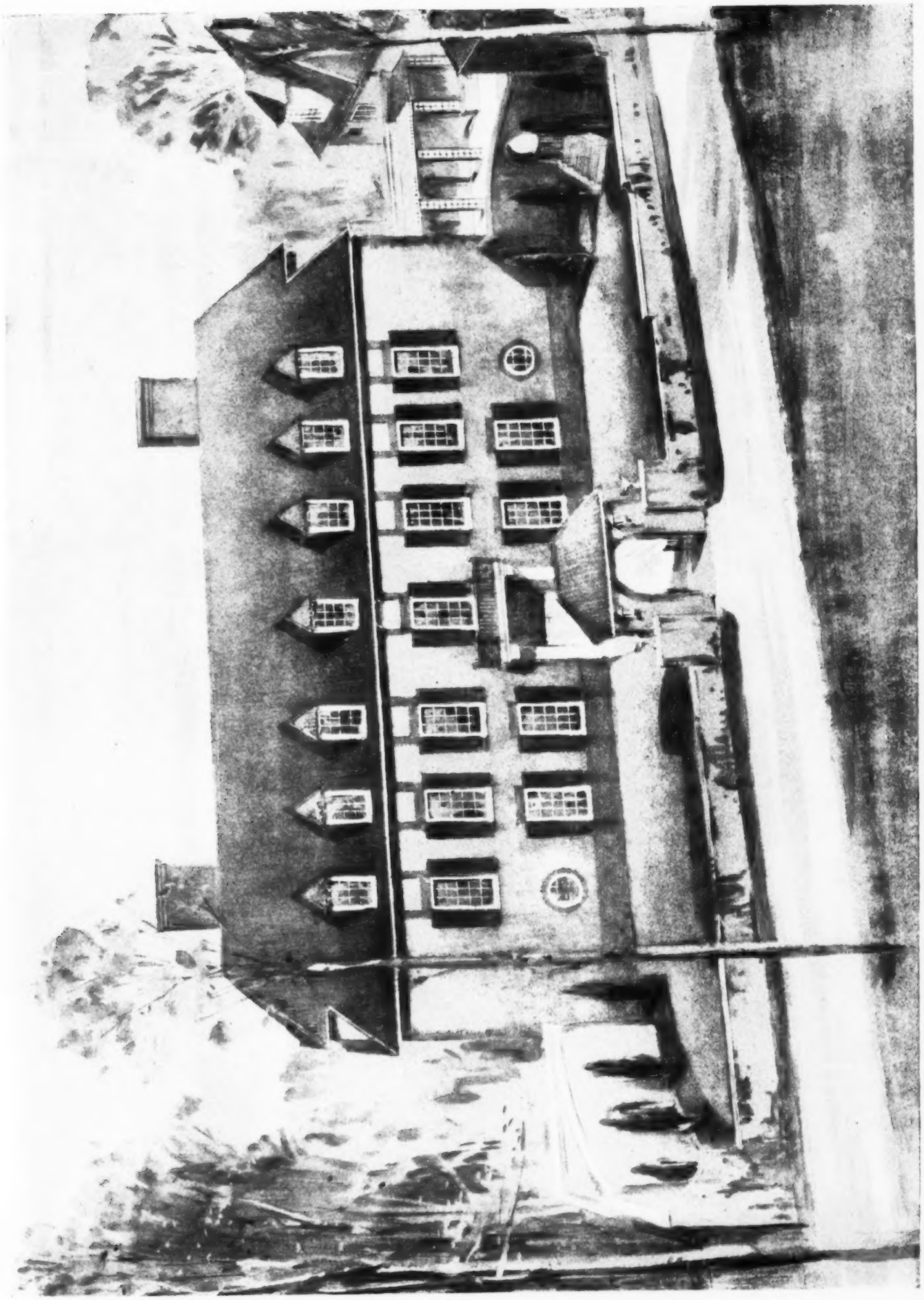
Sir Edwin Cooper, Architect.

JAN. 2 1



Forestridge, Sussex: Entrance to Garage and Stables. Sir Edwin Cooper, Architect.

UNIV. OF MICH.



Forestridge, Sussex. Sir Edwin Cooper, Architect.

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THE REGENT STREET QUADRANT FROM PICCADILLY CIRCUS F

CALENDAR 1927

US FROM THE DESIGN OF SIR REGINALD BLOMFIELD R.A.-F.S.A.

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Supplement to "The Builder" January 14th 1927

SHOWING THE
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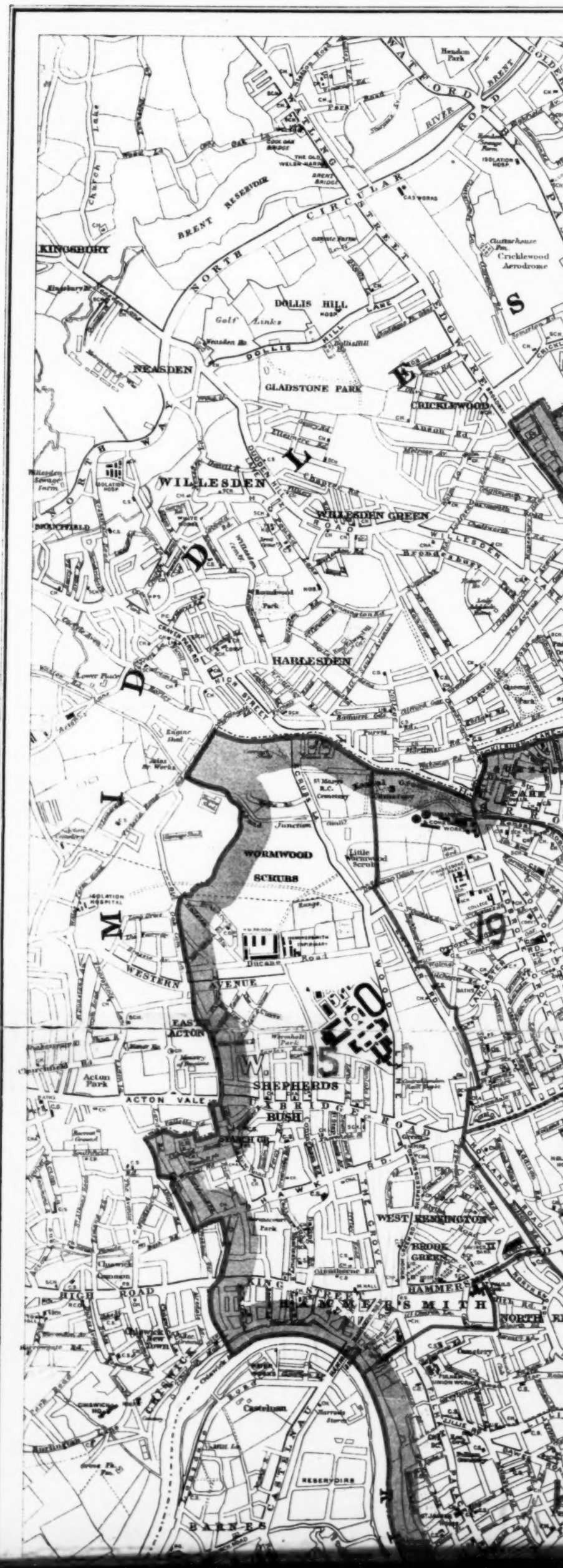

THE BOUNDARIES
OF THE
TS UNDER THE BUILDING ACTS

"THE BU
COUNTY

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Highgate Wood
Queens Wood
CROUCH END
GOLDERS GREEN
Golf Links
Butler's Hill
Turnets Wood
HIGH GATE
North Wood
Wood
Golders Hill Park
Cricklewood Aerodrome
HAMPSTEAD HEATH
Vale of Health
Parliament Hill
Cricket Ground
HAMPSTEAD
KILBURN
ST JOHNS WOOD
Primrose Hill
REGENTS PARK
CAMDEN TOWN
KENTISH-TOWN
HOLLOWAY
HIGHBURY
CANONBURY
ISLINGTON
Leighton Road
Holloway Prison
Mercers' Hall
Tufnell Park Road
Clissold Park
Pinsbury
Finsbury
Paddington Cemetery
Lord's Cricket Ground
MARYLEBONE
BLOOMSBURY
HOLBORN
FLEET STR.
RIVER
BAYSWATER
HYDE PARK
Serpentine
KENSINGTON GARDENS
KENSINGTON
BROMPTON
EARLS COURT
CHELSEA
Chelsea Embankment
BATTERSEA PARK
WALHAM GR.
LAMBETH
SOUTH LAMBETH
WALWORTH
KENNINGTON
Queens Dock
Gas Works
Pimlico Road
Victoria
St. James Park
Green Park
Buckingham Palace Gardens
Prince of Wales Rd.
Chalk Farm Road
Eastonville Rd.
Euston Road
Tottenham Court Road
Oxford St.
Kingsway
Aldwych
Waterloo Bridge
Westminster Bridge
Blackfriars Bridge
Southwark Bridge
Borough High St.
Kent Rd.
Walworth Rd.
Albany Rd.
Camberwell
Old Kent Rd.
Golders Green Rd.
North End Rd.
Hampstead Lane
Highgate Hill
Archway Rd.
Holloway Rd.
Caledonian Rd.
Pentonville Rd.
City Rd.
Goswell Rd.
Old St.
Bishopsgate
Fleet St.
Queen Victoria St.
Cannon St.
Upper Thames St.
Lower Thames St.
Tooley St.
Bermondsey St.
Kensington High St.
Kensington Road
Knightsbridge
Cromwell Road
Fulham Road
Brompton Road
Sloane St.
Sloane Square
Victoria St.
Grosvenor Road
Millbank
Vauxhall Bridge Rd.
Vauxhall Bridge
Lambeth Palace
Lambeth Bridge
Westminster Abbey
Houses of Parliament
Whitehall
Trafalgar Square
Charing Cross
Strand
Waterloo Station
Cemetery
Hospital
Workhouse
Gas Works
Water Works
Public House
Cricket Ground
Golf Links
Bowling Green
Tennis Courts
Baths
Swimming Baths
Reservoir
Pumping Station
Electric Light Works
Power House
Fire Station
Police Station
Post Office
Telegraph Office
Telephone Exchange
Railway Station
Underground Railway
Tramway
Omnibus Route
Church
Chapel
Synagogue
Mosque
Museum
Library
Theatre
Music Hall
Public Hall
Market
Slaughter House
Barracks
Prison
Asylum
Workhouse
Infirmary
Dispensary
Lunatic Asylum
Orphanage
Reformatory
Industrial School
Training Ship
Training School
Training Home
Training Farm
Training Institution
Training College
Training Hospital
Training Asylum
Training Prison
Training Workhouse
Training Infirmary
Training Dispensary
Training Lunatic Asylum
Training Orphanage
Training Reformatory
Training

"THE BUILDER" MAP
OF THE
COUNTY OF LONDON

NAMES AN

No.	District	Name
1	Battersea	CUBITT, H. W.
2	Bermondsey	MESTON, A. C.
3	Bethnal Green	MENNIE, F. E.
4	Camberwell	STOKES, A. P.
5	Chelsea	BARKER, F. W. C.
6	City of London, East	TODD, J.
7	City of London, West	do. (Interim)
8	Clapham	GRELLIER, W.
9	Deptford	GREIG, B.
10	Finsbury	DOVASTON, J.
11	Fulham	ROGERS, W. H.
12	Greenwich	FILLARY, A. A.
13	Hackney, East	CHANTER, H. R.
14	Hackney, West	WHINCOP, W. G.
15	Hammersmith	WOODWARD, A. L.
16	Hampstead	MUNDELL, J. E.
17	Holborn	PERKINS, W. G.
18	Islington	LEES, E. W.
19	Kensington, North	TOLLEY, G. (Interim
20	Kensington, South	LEGGE, H. A.

BY

SPECIAL PERMISSION
OF THE

LONDON COUNTY COUNCIL

ES AND ADDRESSES OF DISTRICT SURVEYORS (with Reference Numbers to Map)

Name	Address	Telephone	Office Hours
., H. W.	233, Lavender Hill, S.W.11	Battersea 4218	9.30-5 Sat.9.30-1
N, A. C.	Bank Chambers, Tower Bridge, Tooley St., S.E.1	Hop 0558	do.
E, F. E.	311, Cambridge Rd., E.2	Avenue 3187	do.
S, A. P.	173, Herne Hill, Dulwich, S.E.24	Brixton 3445	do.
R, F. W. C.	4, Sydney St., S.W.3	Kensington 2115	do.
J.	7, Camomile St., E.C.3	Avenue 8711	do.
(Interim)	do.	do.	do.
IER, W.	188, High St., Clapham, S.W.4.	Holborn 5523	10-4 Sat. 10-1
B.	329, New Cross Rd., S.E.14	New Cross 0890	9.30-5 Sat. 9.30-1
TON, J.	378, St.John St., Finsbury, E.C.1	Clerkenwell 9232	do.
S, W. H.	Broadway House, The Broadway, Fulham, S.W.6	Western 2390	do.
Y, A. A.	Borough Hall, Royal Hill, Greenwich, S.E.10	Greenwich 0155	do.
ER, H. R.	Westminster Bank Chambers, 20, Amhurst Rd., Hackney, E.8	Clissold 7302	do.
OP, W. G.	do.	do. 7685	do.
VARD, A. L.	18, Queen St., The Broadway, Hammersmith, W.6	Riverside 0922	do.
LL, J. E.	305, Finchley Rd., N.W.3	Hampstead 8704	do.
NS, W. G.	11, Grays Inn Square, W.C.1	—	do.
. W.	407, Holloway Rd., N.7	North 1561	do.
, G. (Interim)	96, Westbourne Grove, W.2	Park 2799	do.
H. A.	113, Earls Court Rd., S.W.5	Western 4739	do.

No.	District	Name	Address	Telephone	Office Hours
21	Lambeth, North	BLACK, P. J.	69, Kennington Oval, S.E.11	Waterloo 1187	9.30-5 Sat.9.30-1
22	Lambeth, South	WATSON, F. P.	365, Norwood Rd., S.E.27	Streatham 6370	do.
23	Lewisham, East	YOUNG, E. A.	155, Rushey Grn., Catford, S.E.6	Lee Green 1507	do.
24	Lewisham, West	VERSTAGE, A. H.	1, Waldram Road, Forest Hill, S.E.23	Sydenham 1938	do.
25	Paddington	TOLLEY, G.	96, Westbourne Grove, W.2	Park 2799	do.
26	Poplar	KNIGHT, E. W.	135, Bow Rd., E.3	East 6057	do.
27	St. Marylebone	FORD, L. R.	18, Baker St., W.1	—	do.
28	St. Pancras, North	WATKINSON, H. E.	272, Kentish Town Rd., N.W.5	Hampstead 1626	do.
29	St. Pancras, South	YOUNG, H. H.	14, Percy St., W.1	Museum 1867	do.
30	Shoreditch	KNOWLES, C. C.	124, Shoreditch High St., E.1	Central 1455	do.
31	Southwark	MAYHEW, R. H. J.	14-16, New Kent Rd., S.E.1	—	do.
32	Stepney, East	KERR, H. N.	1, West Arbour St., Commercial Road East, E.1	East 1109	do.
33	Stepney, West	BROMLEY, H. T.	130, Whitechapel High St., E.1.	Avenue 7480	do.
34	Stoke Newington	WHINCOP, W. G. (Interim).	171, Church Street, Stoke Newington, N.16	Clissold 7685	do.
35	Wandsworth, East	MORRICE, A. G.	1, Drewstead Rd., Streatham, S.W.16	Streatham 1186.	do.
36	Wandsworth, West	ELTON, P. I.	85, High Street, Wandsworth, S.W.18	Battersea 4537.	do.
37	Westminster, East	HILIS, O. C.	60, Haymarket, S.W.1	Gerrard 4553.	do.
38	Westminster, West	SURREY, C. W.	9, Woodstock St., W.1	Grosvenor 3088	do.
39	Westminster, South	SHINER, L. A. D.	22, Buckingham Gate, S.W.1	Victoria 5386	do.
40	Woolwich, North	TINSLAY, T. P.	21, William Street, Woolwich, S.E.18	Woolwich 1364	do.
41	Woolwich, South	YOUNG, E. A. (Interim)	do.	do.	do.

Published by THE BUILDER, LIMITED, at 4 Catherine Street, Aldwych, W.C. 2.

UPPER NORWOOD
NORWOOD NEW TOWN
LOWER STREATHAM
STREATHAM
NORWOOD
WEST DULWICH
DULWICH
NORWOOD HILL
KNIGHTS HILL
ELDERSLEIGH
CROWN
LOWER TOOTING
UPPER TOOTING
TOOTING BEC
Common
Links
BALHAM
HIGH ROAD
CHARLMONT ROAD
CLAPHAM COMMON
NORTH SIDE
SOUTH SIDE
CLAPHAM
LAVENDER HILL
BATTERSEA
PARK
CHELSEA EMBANKMENT
VICTORIA
STOCKWELL
BRIXTON
NORTH
SOUTH
KENNINGTON
WALWORTH
CHURCH
CHAMPION HILL
DENMARK HILL
DULWICH COMMON
GOLF LINKS
ROAD
PARK
HILL
GREEN
LANE
STREET
AVENUE
CRESCENT
TERRACE
GARDENS
SQUARE
COURT
PLACE
ROW
WALK
GROVE
MANSIONS
HOUSE
BUILDINGS
CHURCH
STATION
HOSPITAL
SCHOOL
COLLEGE
THEATRE
CINEMA
MUSEUM
LIBRARY
GOLF
TENNIS
CRICKET
PUBLIC
HOUSE
INN
TAVERN
ARMS
CROWN
BRIDGE
RAILWAY
TUNNEL
SUBWAY
CEMETERY
CHURCHYARD
GARAGE
POST
OFFICE
TELEPHONE
KIOSK
PUMP
WATER
TOWER
MONUMENT
FOUNTAIN
STATUE
GATE
GATES
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BERMONDSEY
ROTHERHITHE
WALWORTH
NEW KENT RD.
MILLWALL
MILLWALL DOCKS
CUBITT TOWN
Greenland Dock
EAST GREENWICH
TRAFALGAR
DEPTFORD
GREENWICH
GREENWICH PARK
ROYAL OBSERVATORY
ROYAL HOSPITAL
SHOOTERS HILL RD.
BLACKHEATH
Blackheath Vale
LEE
LEE HIGH
LEWISHAM
HITHER GREEN
CATFORD
SOUTH END
PECKHAM
NEW CROSS
HATCHAM
AMERSHAM
CHAMPION HILL
EAST DULWICH
PECKHAM RYE
PECKHAM RYE PARK
BROCKLEY
LADYWELL
DULWICH
DULWICH COMMON
FOREST HILL
Brockley Hill
STANSTEAD ROAD
WEST DULWICH
WEST NORWOOD
NORWOOD NEW TOWN
UPPER NORWOOD
UPPER SYDENHAM
LOWER SYDENHAM
CRYSTAL PALACE
KENT
Golf Links
Cemetery
Sports Ground
Athletic Ground
Wells Park
Dulwich Park
Brockwell Park
Whitefoot Lane
Forster Memorial Park
22
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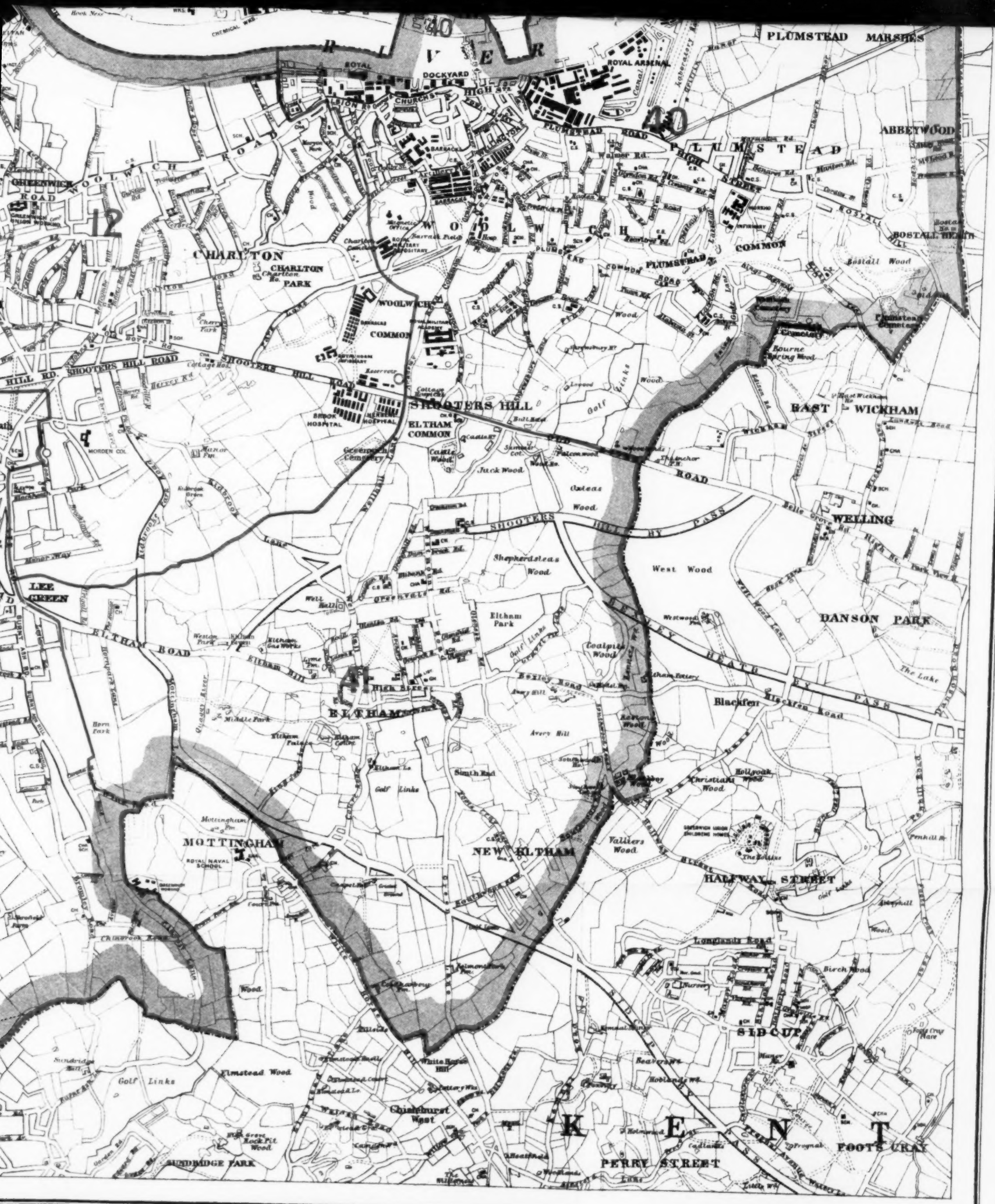
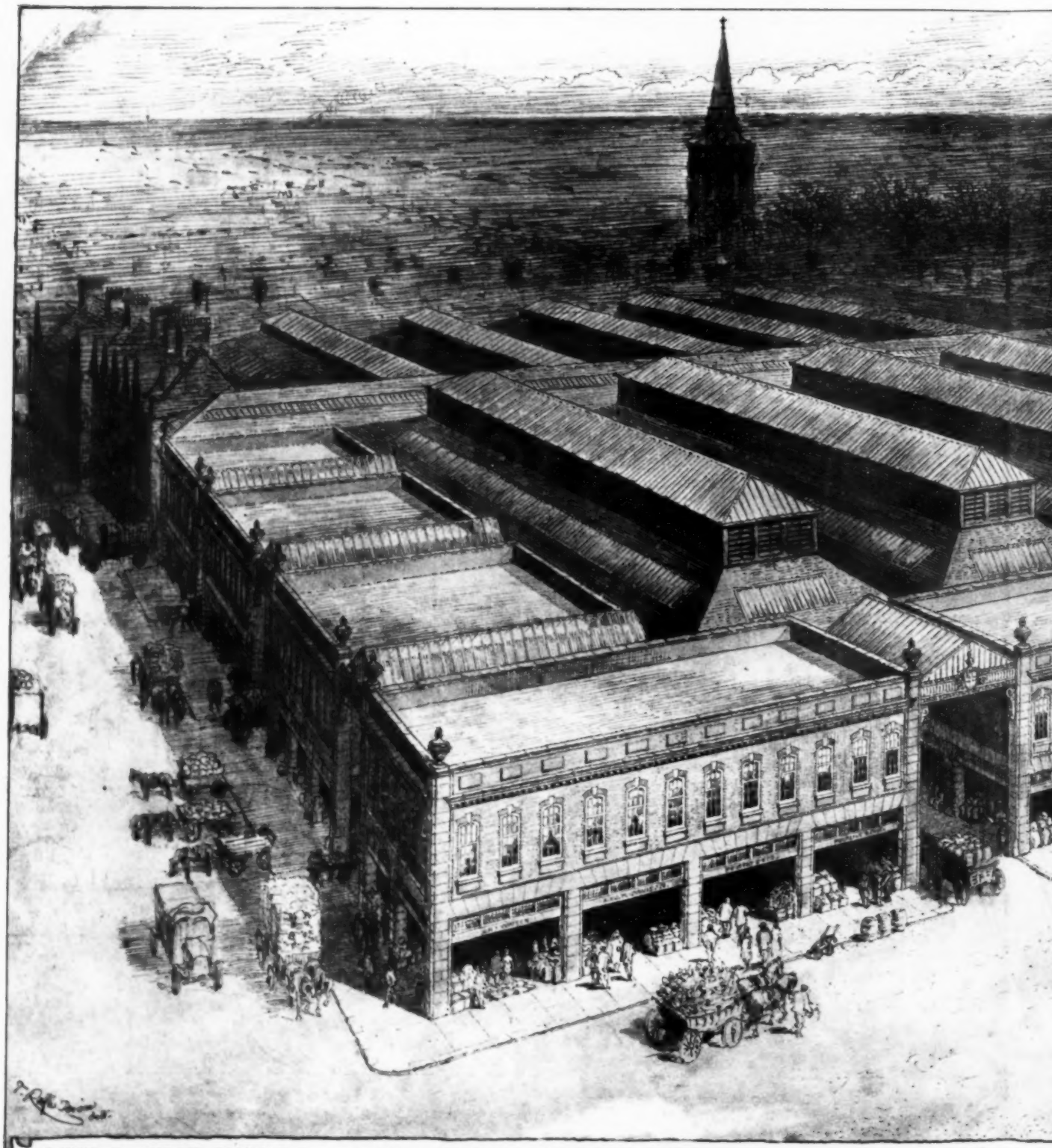
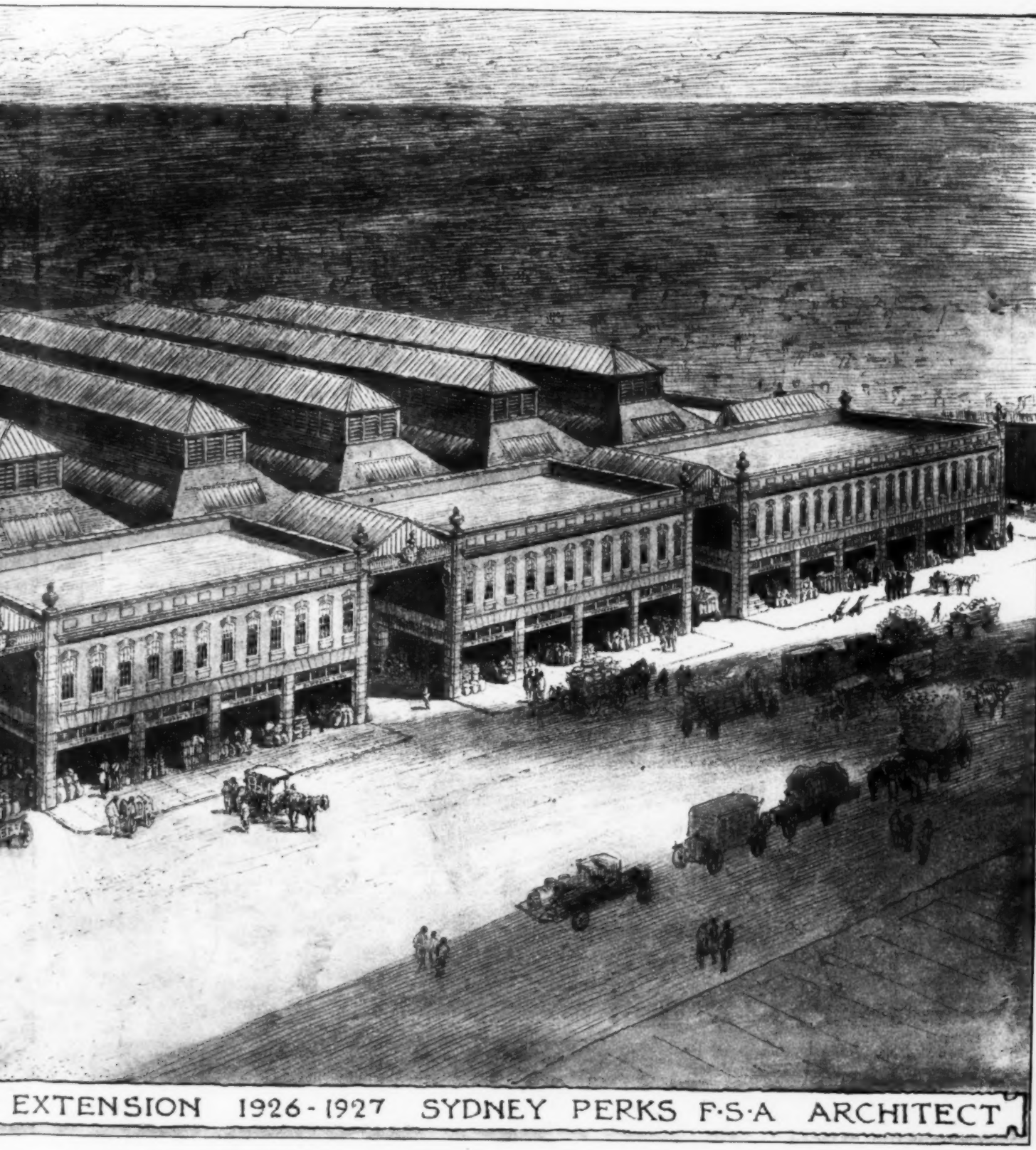
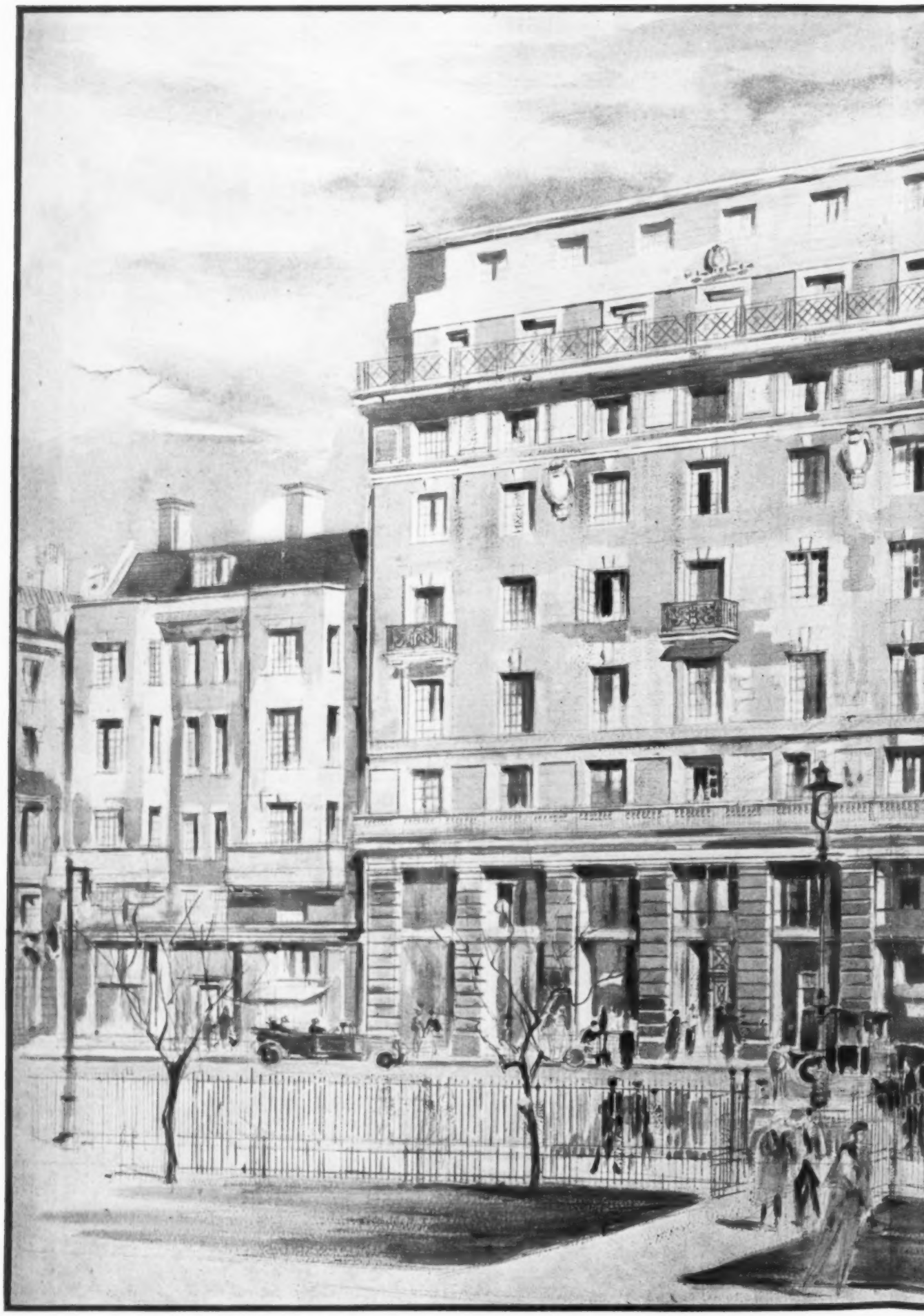

PLUMSTEAD MARSHES
ROYAL ARSENAL
ROYAL DOCKYARD
RIVER
ABBEYWOOD
PLUMSTEAD
BOSTALL HEATH
COMMON
CHARLTON
CHARLTON PARK
WOOLWICH
COMMON
SHOOTERS HILL
ELTHAM COMMON
EAST WICKHAM
WELLING
DANSON PARK
LEE GREEN
ELTHAM
MOTTINGHAM
NEW ELTHAM
HALFWAY STREET
SIDCUP
KENT
FOOTS CRAY
PERRY STREET
SUNDRIDGE PARK
Bostall Wood
Bourne Spring Wood
Jack Wood
Oaleas Wood
Shepherdsleas Wood
West Wood
Eltham Park
Scaliots Wood
Avery Hill
Valliers Wood
Christmas Wood
Birch Wood
Elmstead Wood
Golf Links
SHOOTERS HILL ROAD
ELTHAM ROAD
BEXLEY HEATH
BY PASS
WOOLWICH ROAD
GREENWICH ROAD
PLUMSTEAD ROAD
Blackfen
Blackfen Road
Longlands Road
Station Road
Maidstone Road
Chislehurst West
White Horse Hill
Smith Rad
Bexley Road
Kidbrook Lane
Kidbrooke Park Road
Chinbrook Meadow
Well Hall
Hollycroft Wood
Penhill
The Lake
Foots Cray Mare
Sidcup Place
Sidcup Hill
Sidcup Station
Sidcup Golf Links
Sidcup Cemetery



NEW BUILDINGS FOR THE SPITALFIELDS MARKETS EXT



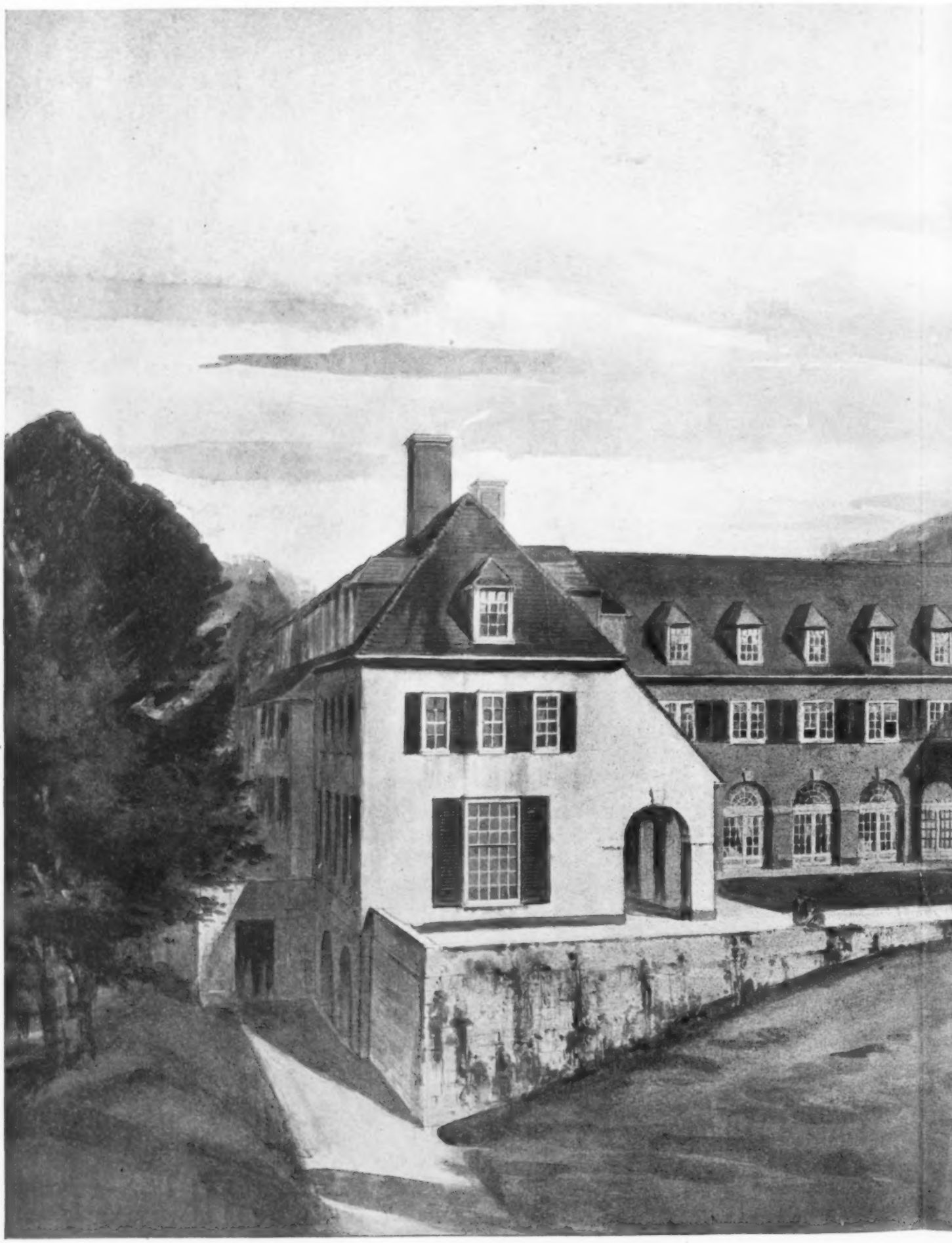
EXTENSION 1926-1927 SYDNEY PERKS F·S·A ARCHITECT



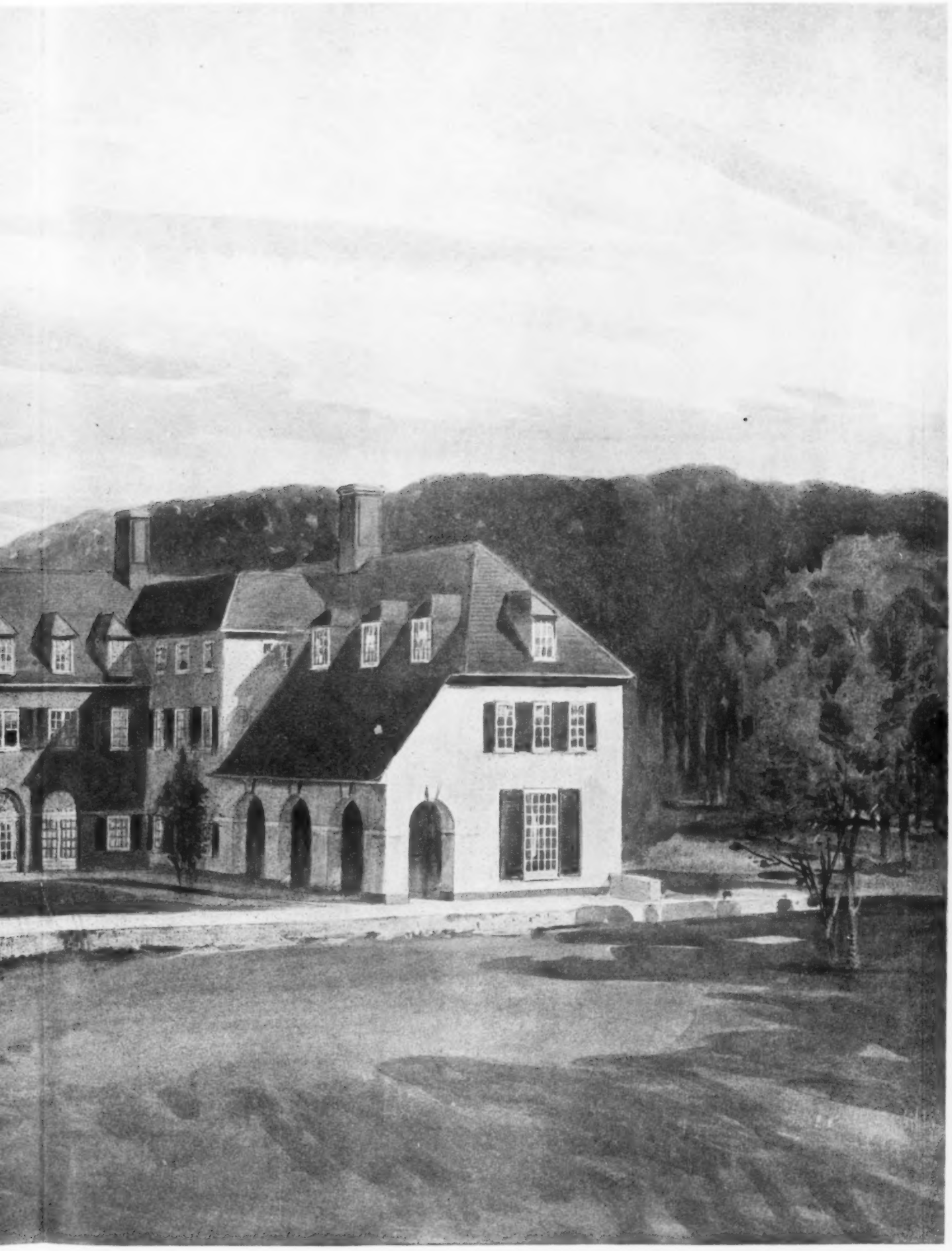
STRATTON HOUSE, PICCA

Mr. W. Curtis Green, A.R.

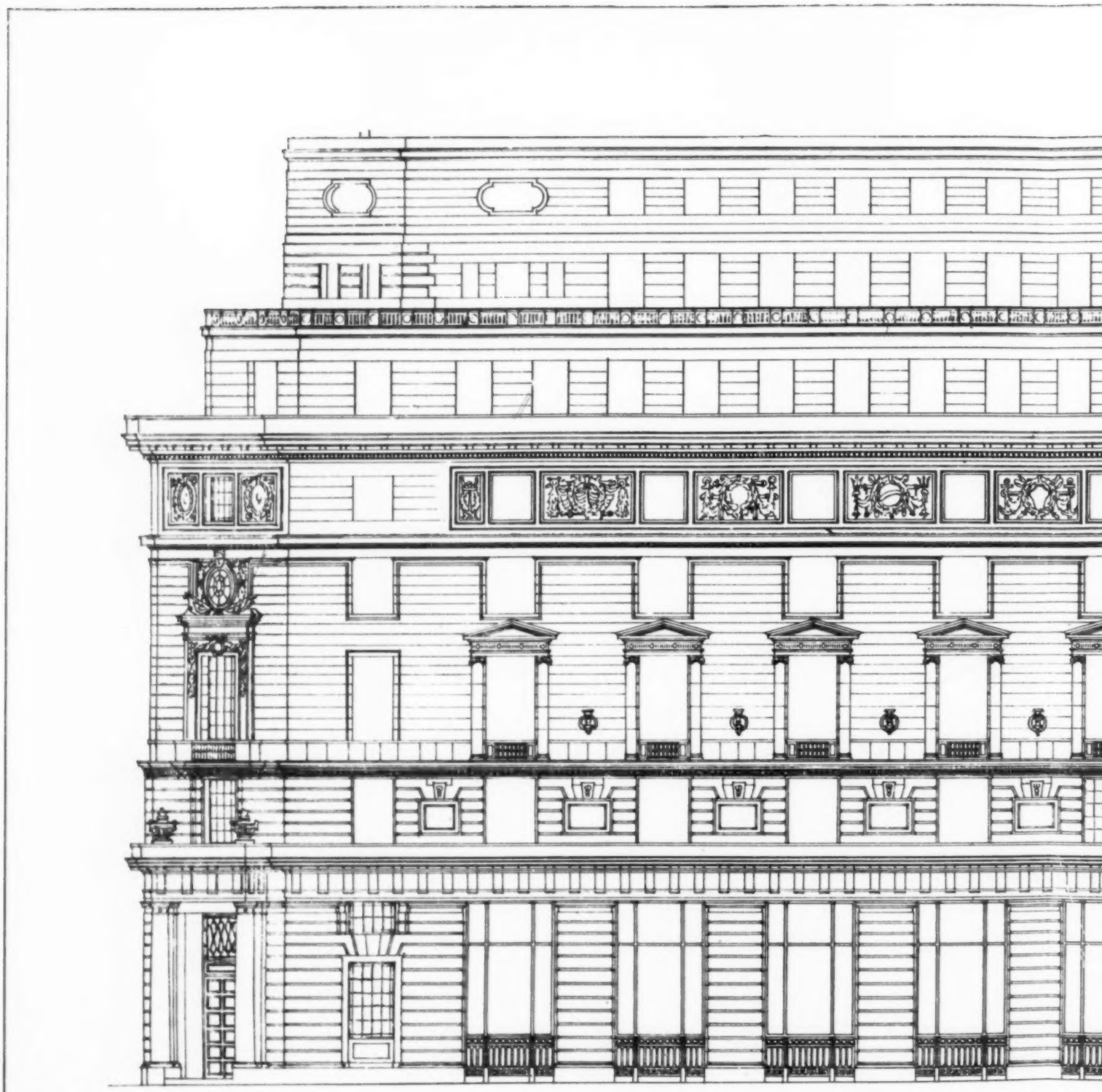
PICCADILLY, W.
A.R.A., Architect.



STAR AND GARTER HOME, SA
Sir Edwin Cooper, A



ER HOME, SANDGATE, KENT.
n Cooper, Architect.



Lima Street

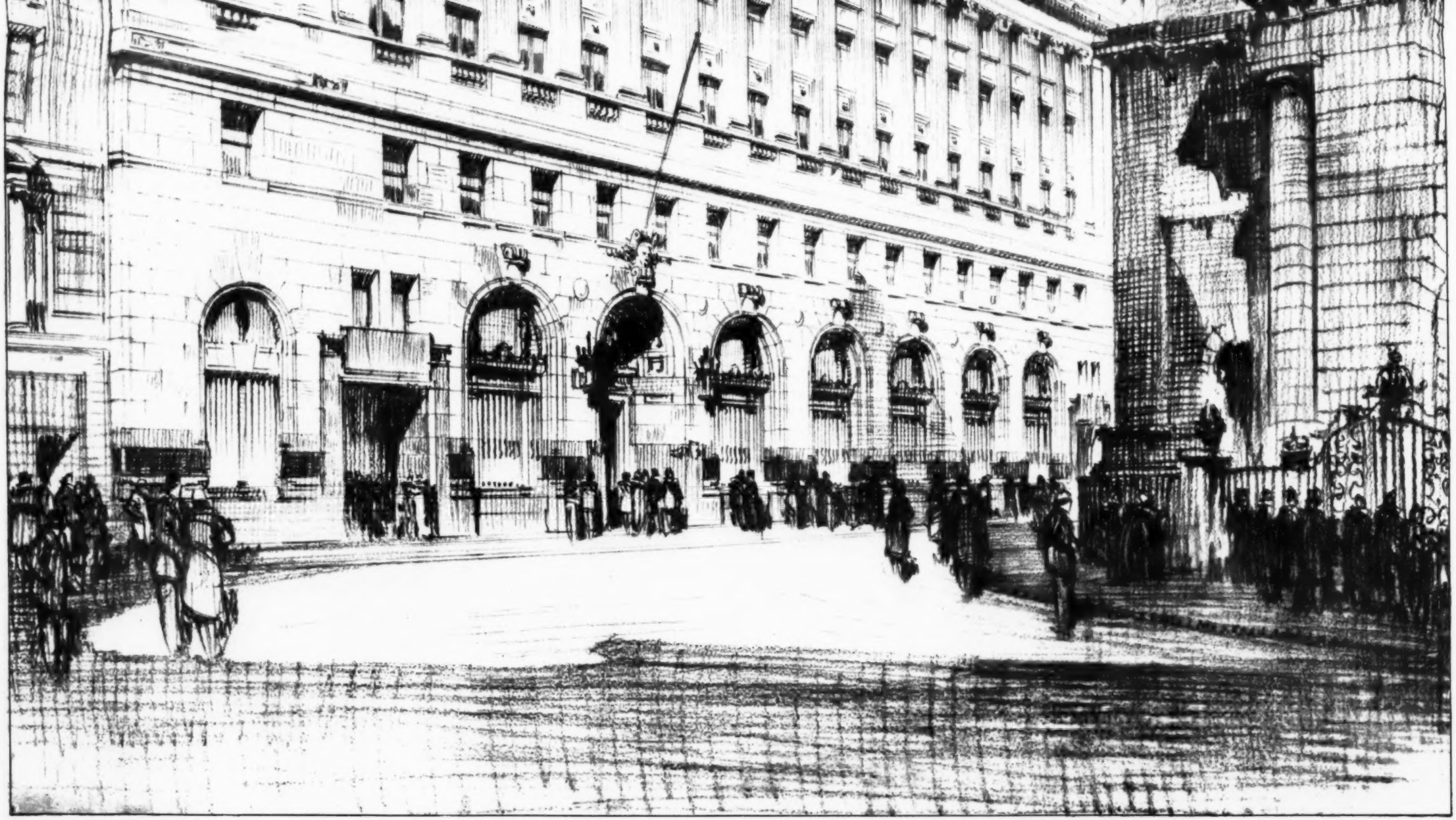
Head Building for Royal
Elevations to

HEAD BUILDING FOR ROYAL MAIL STEAM PACKET COMPA
Sir Edwin Cooper, Ar

r Royal Mail Steam Packet Company
ions to Leadenhall Street

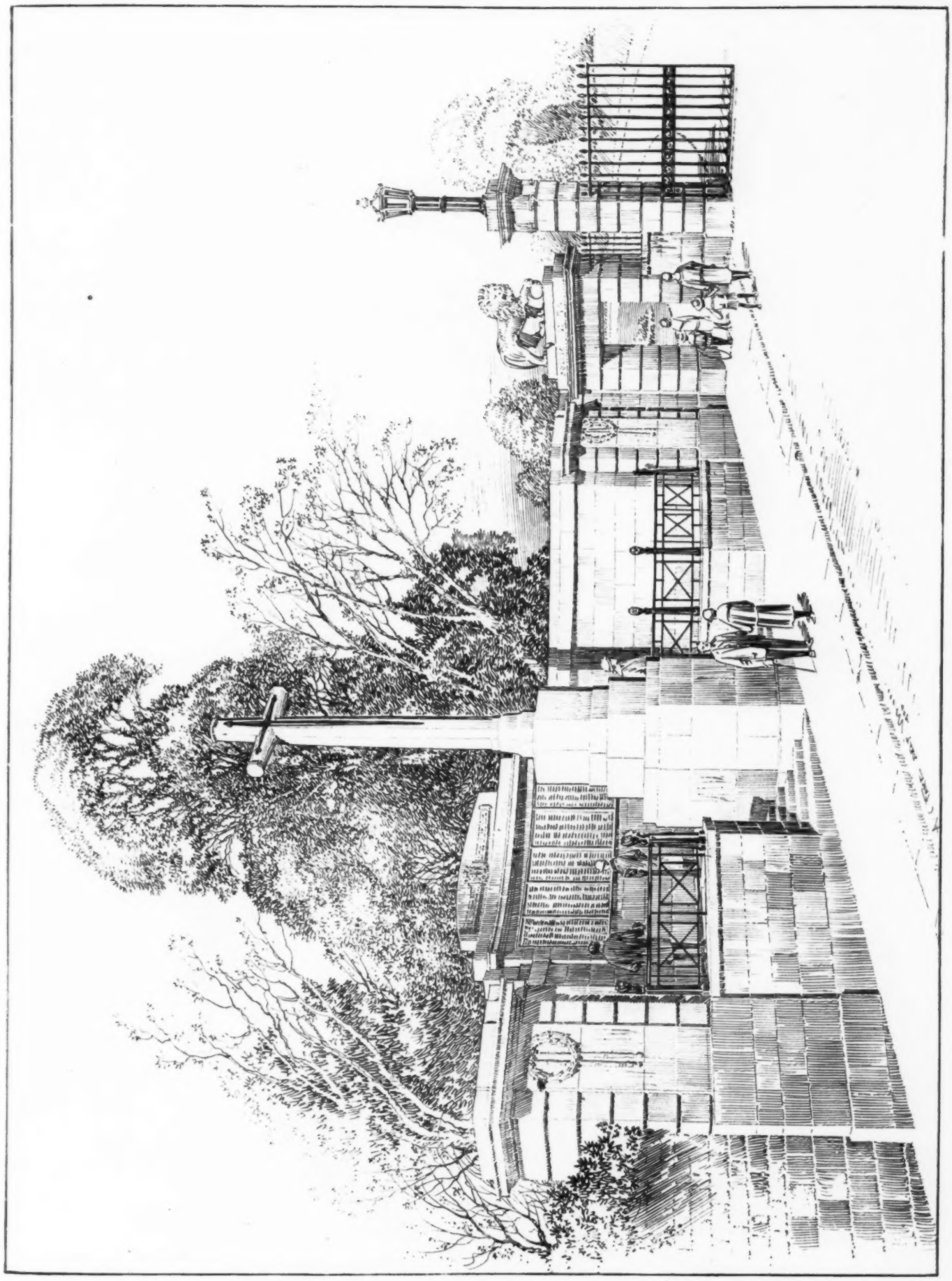
Lloyds

KET COMPANY. ELEVATION TO LEADENHALL STREET.
Cooper, Architect.

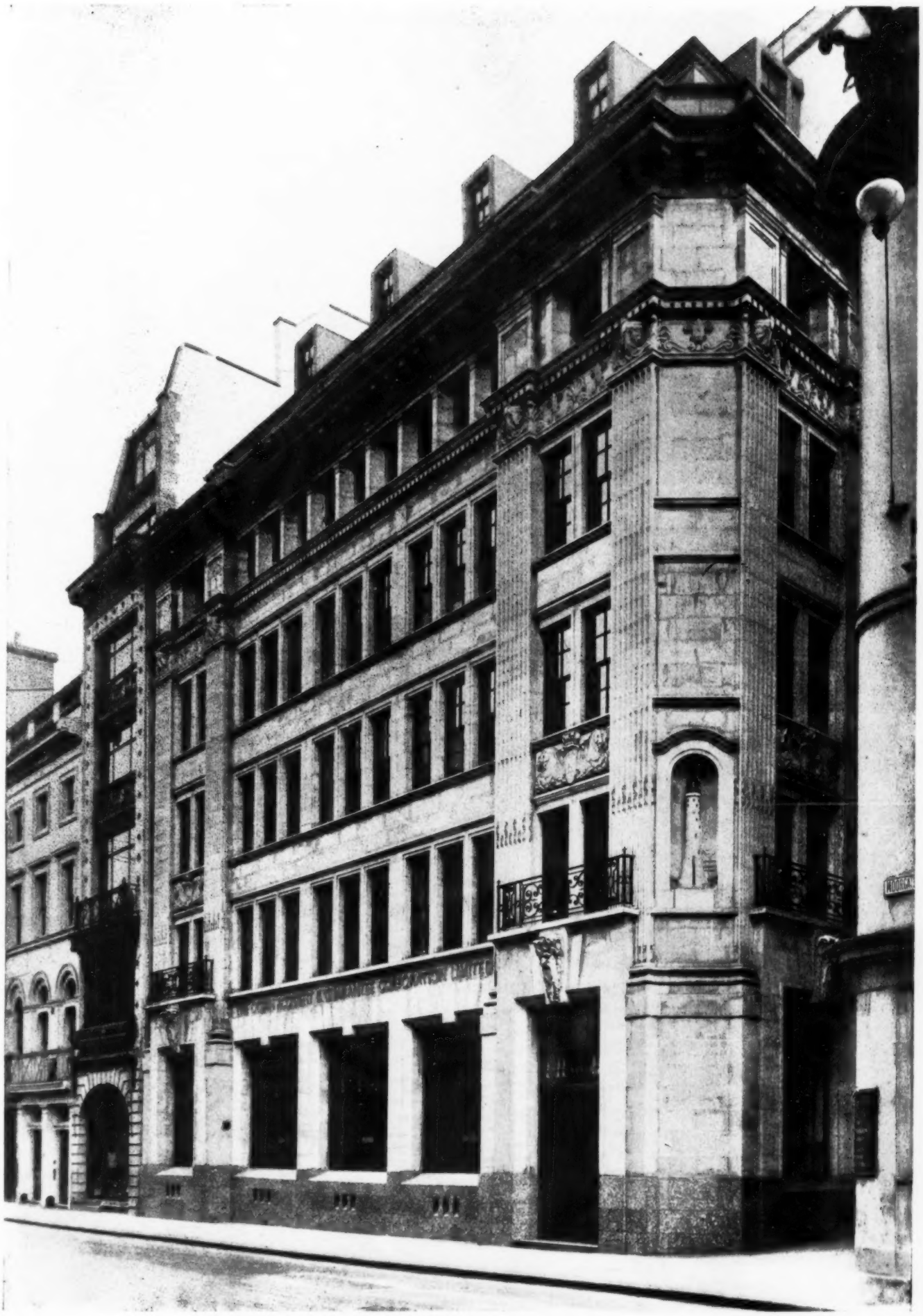


NEW HEADQUARTERS FOR LLOYDS BANK, CORNHILL AND LOMBARD STREET.
Sir John Burnet & Partners, and Messrs. Campbell Jones, Sons & Smithers, Associated Architects.

UNC



Bath War Memorial. Sir Reginald Blomfield, R.A., Architect.



New Offices for the Ocean Accident & Guarantee Corporation, Ltd., Moorgate, E.C.

SIR ASTON WEBB, R.A., & SON, Architects.

UNIV. OF MICH.

House at Ightham, Kent: The Porch.

MESSRS. BAILLIE SCOTT & BERESFORD, Architects.

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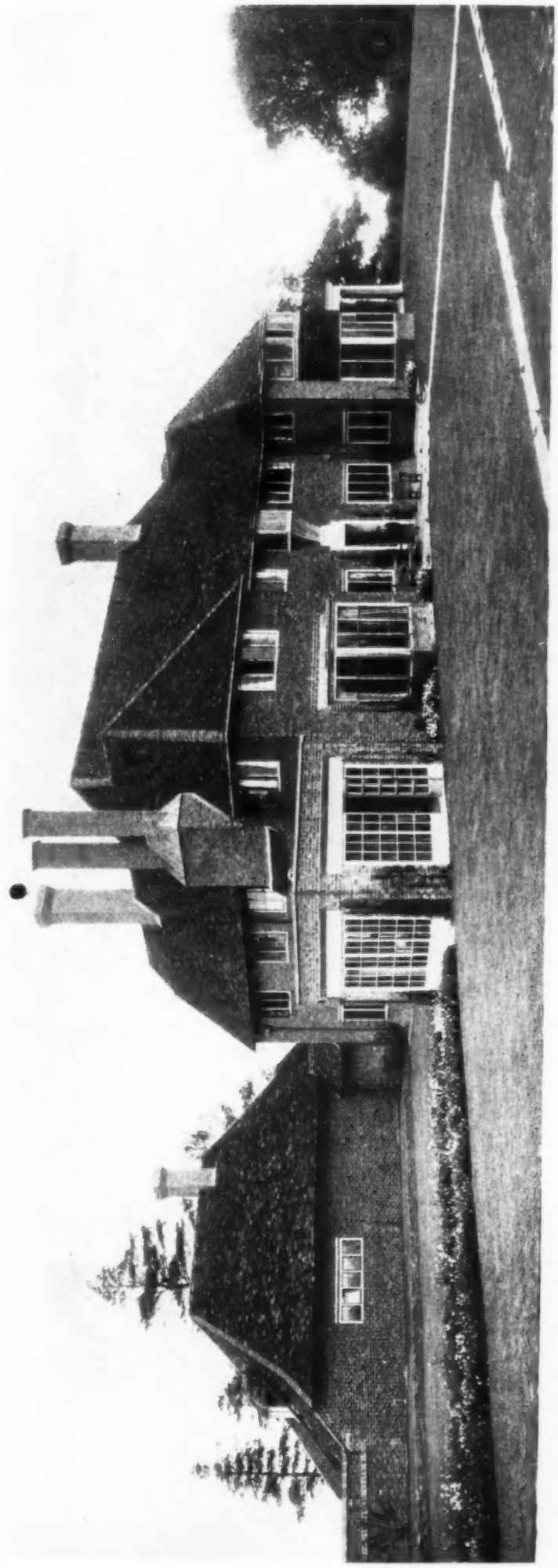

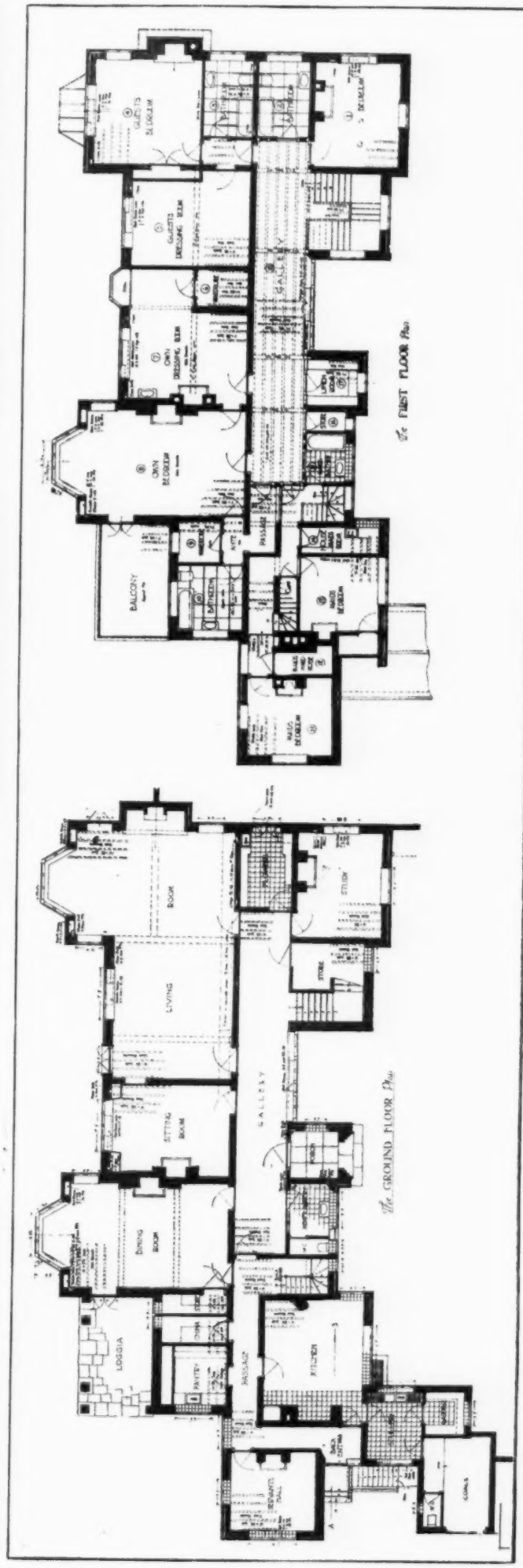

House at Ightham, Kent: View from South-West. MESSRS. BAILLIE SCOTT & BERESFORD, Architects.

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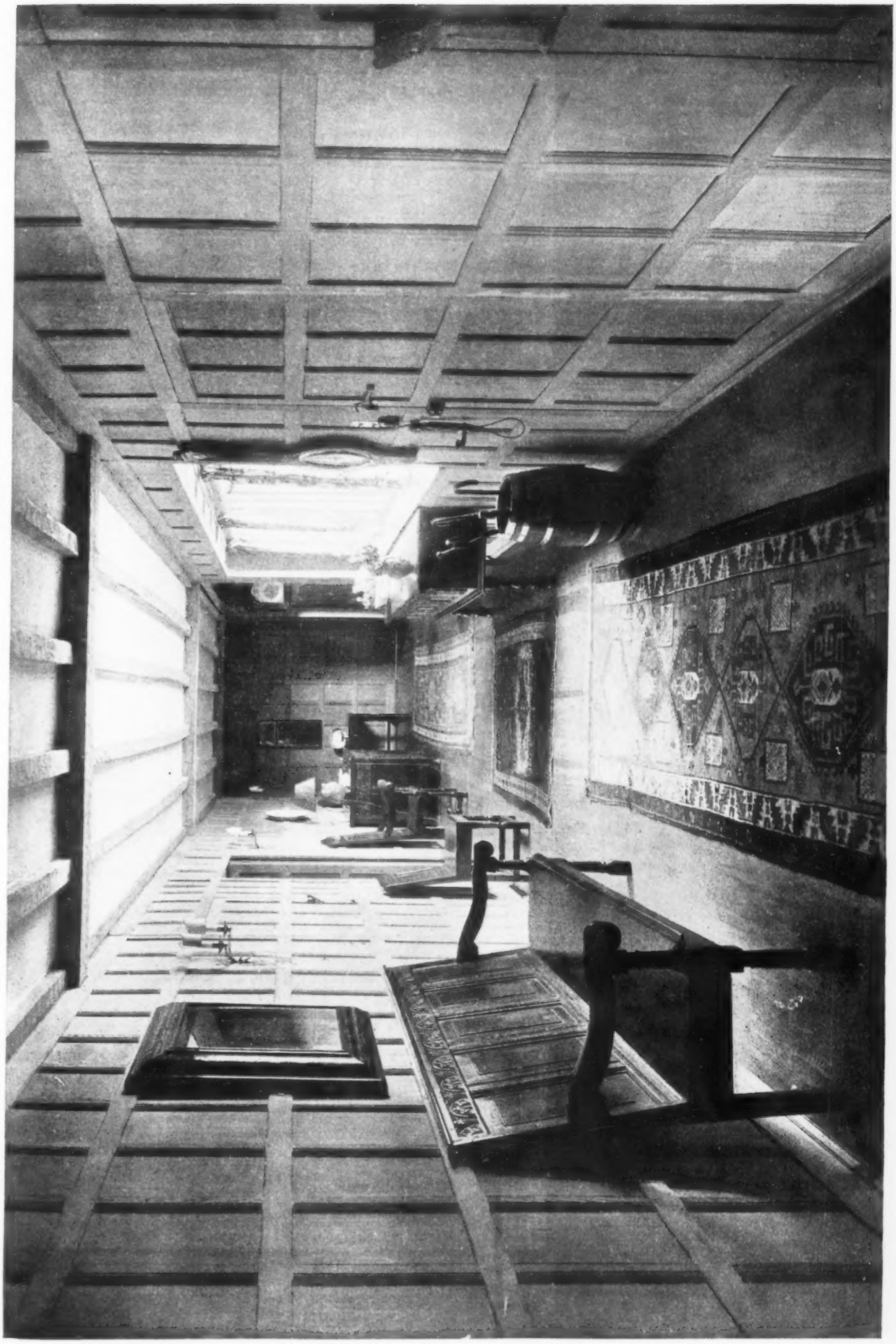


House at Ightham, Kent: The Long Gallery.

Messrs. Baillie Scott & Beresford, Architects.

House at Ightham, Kent: The Sun Room.

House at Ightham, Kent: The Living Hall.

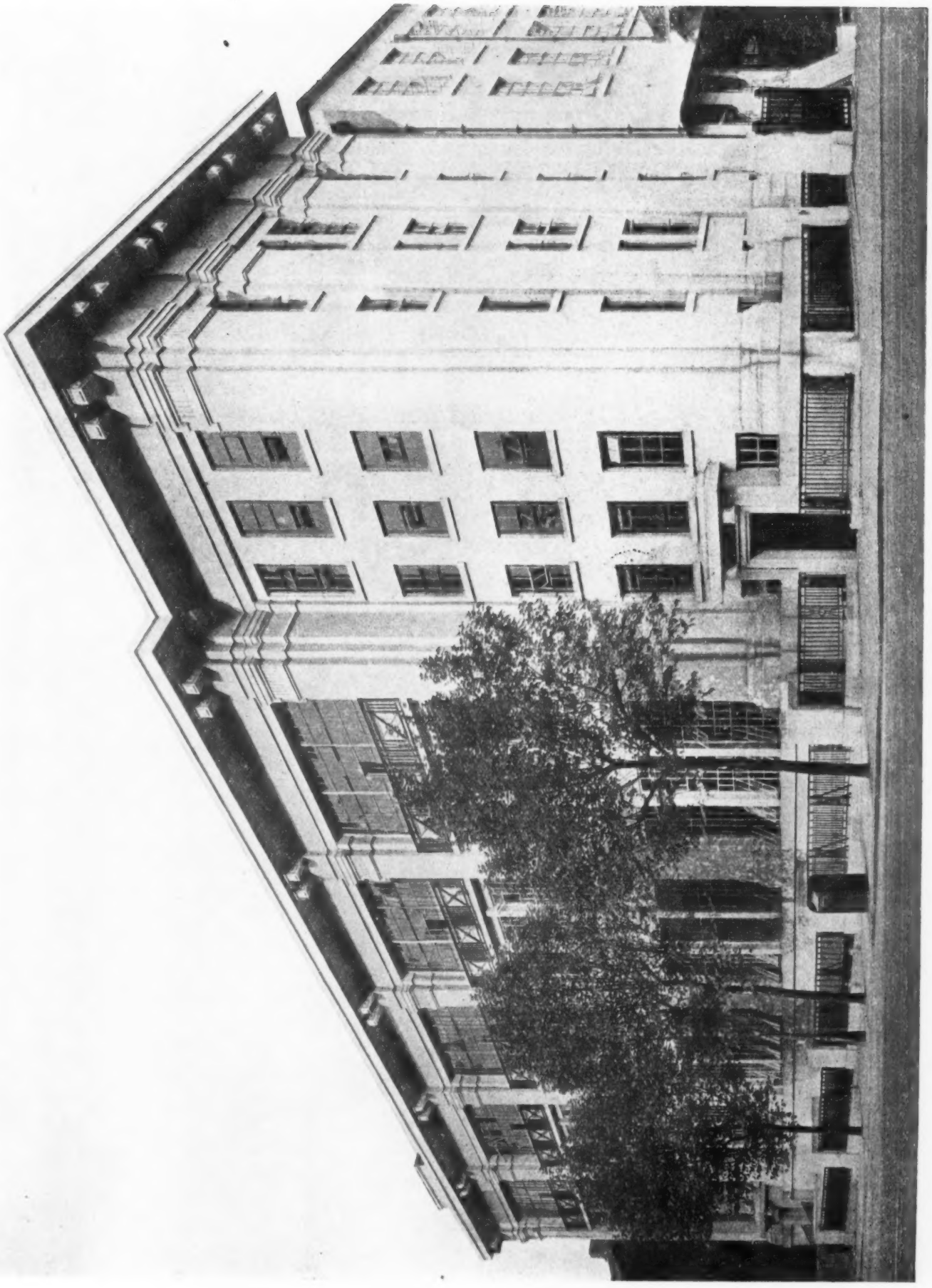
MESSRS. BAILLIE SCOTT & BERESFORD, Architects.

UNIV
MICH.

New Premises for Messrs. Atkinson's, Old Bond Street.

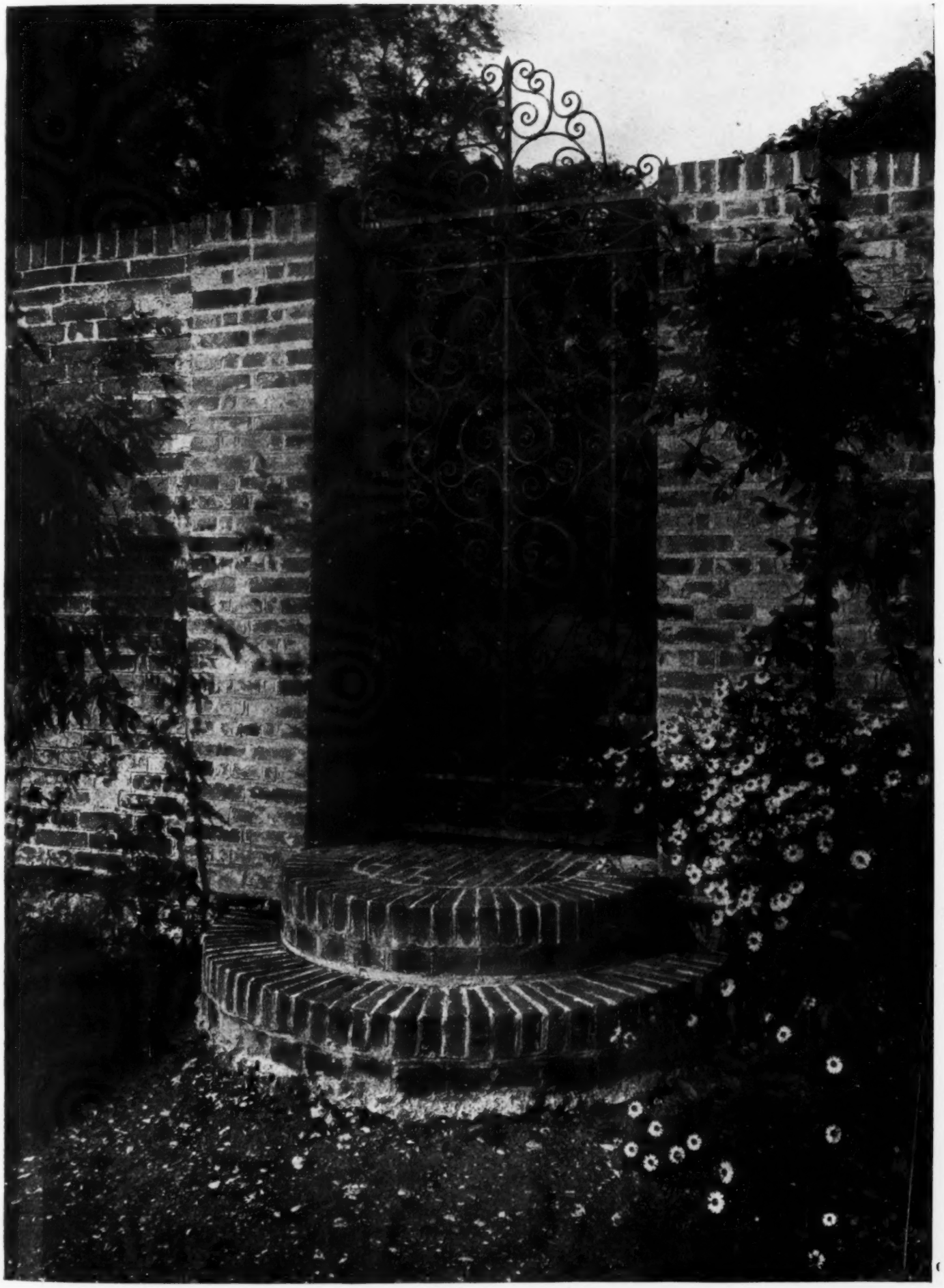
MR. E. VINCENT HARRIS, Architect.

UNIV. MICH.



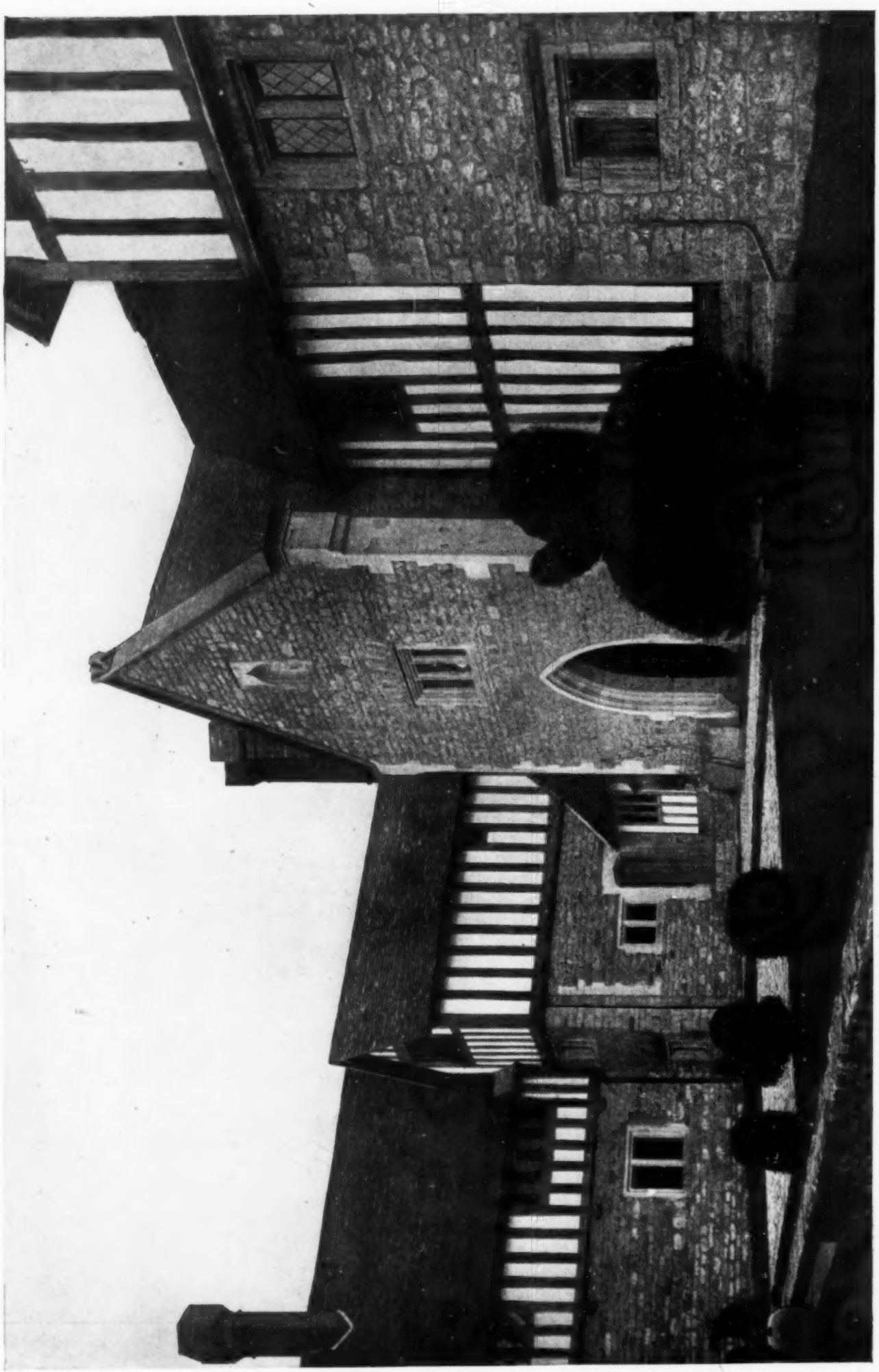
New Letter Sorting Office, Mount Pleasant. Mr. A. R. Myers, A.R.I.B.A. (H.M. Office of Works), Architect.

UNIV. MICH.

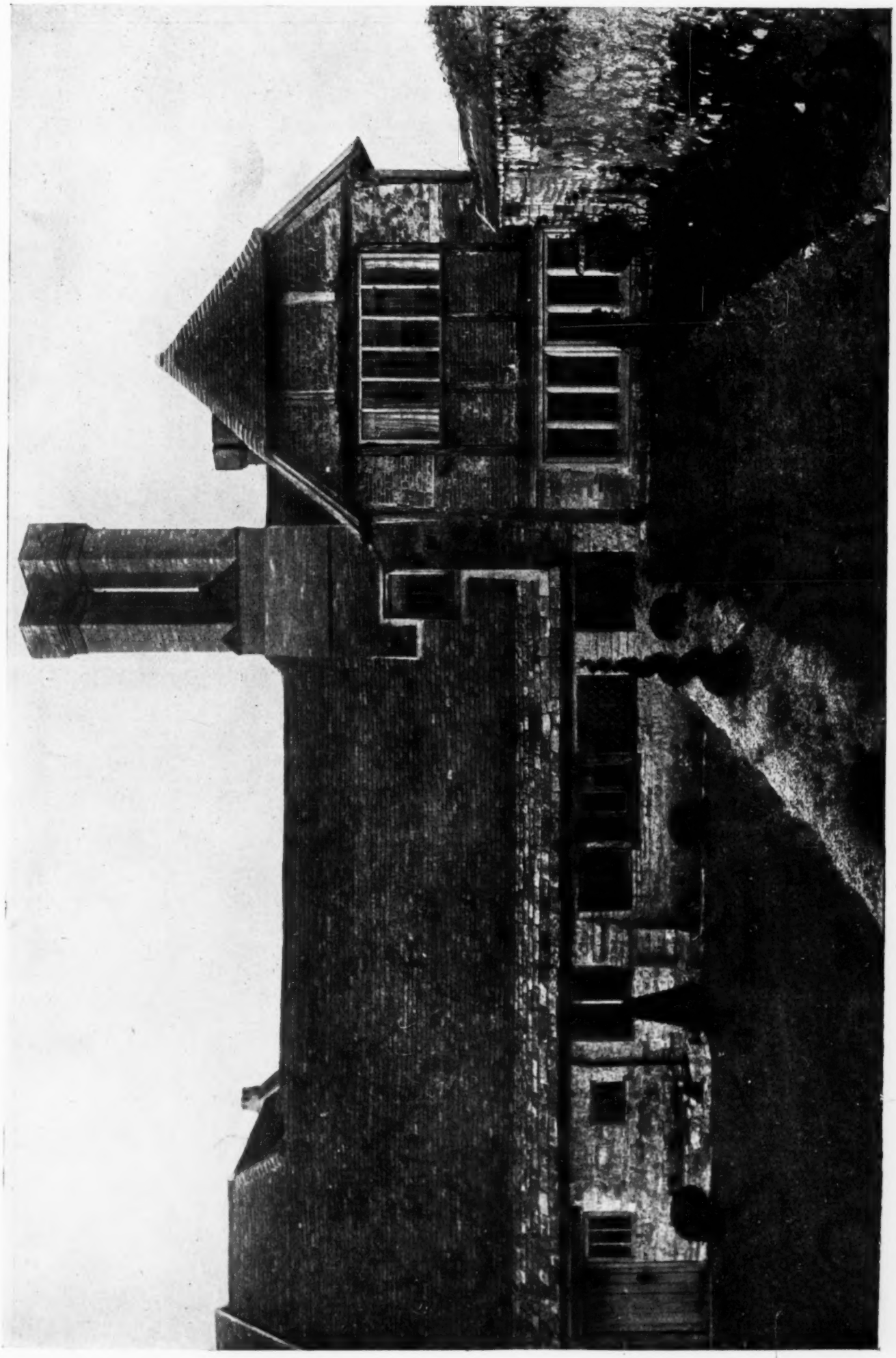


Garden Gate, Nether Winchendon Priory.

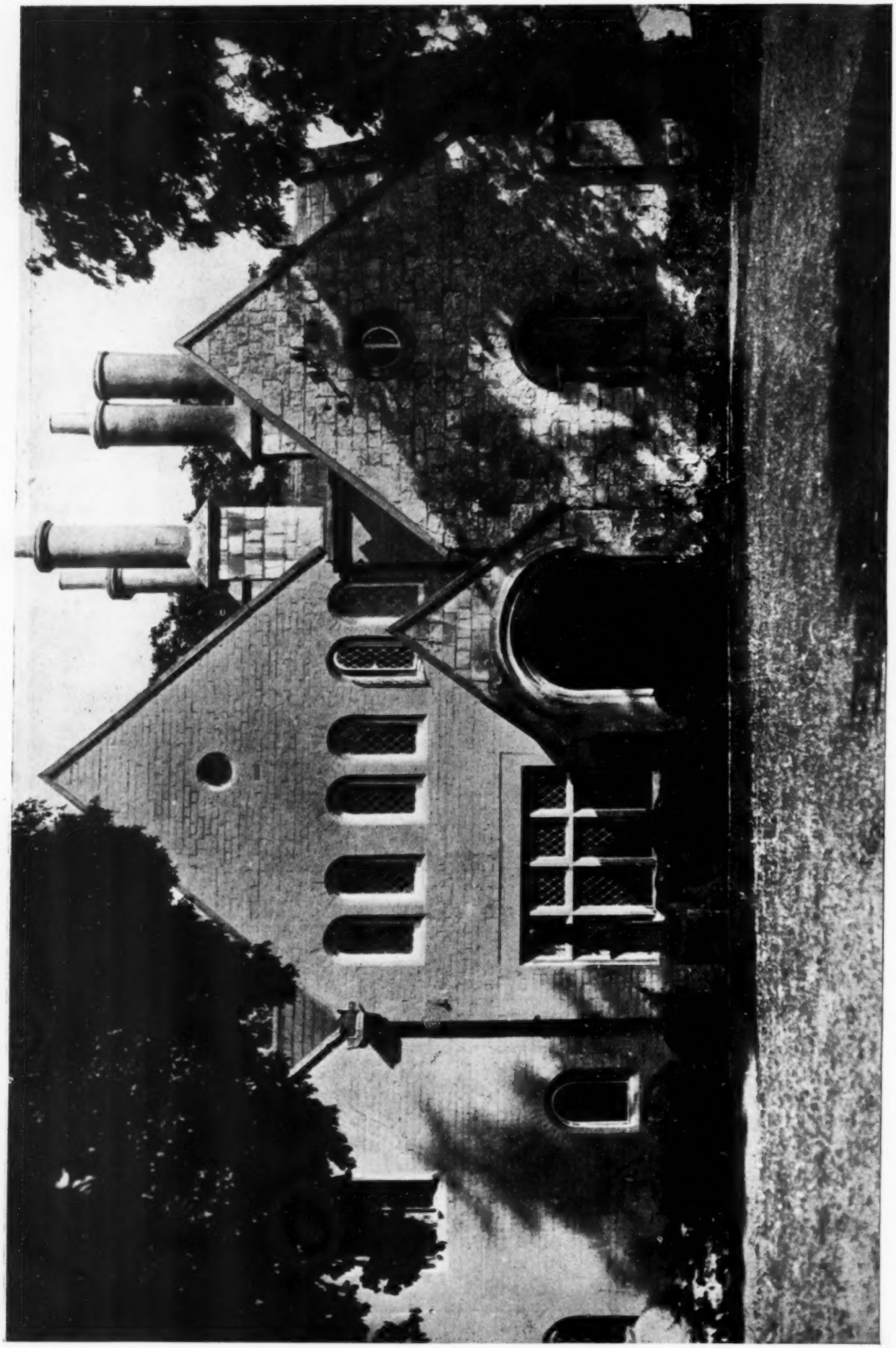
MR. PHILIP TILDEN, Architect.



Long Crendon Manor, near Thame, Bucks: Principal Entrance from Courtyard. MR. PHILIP TILDEN, Architect.



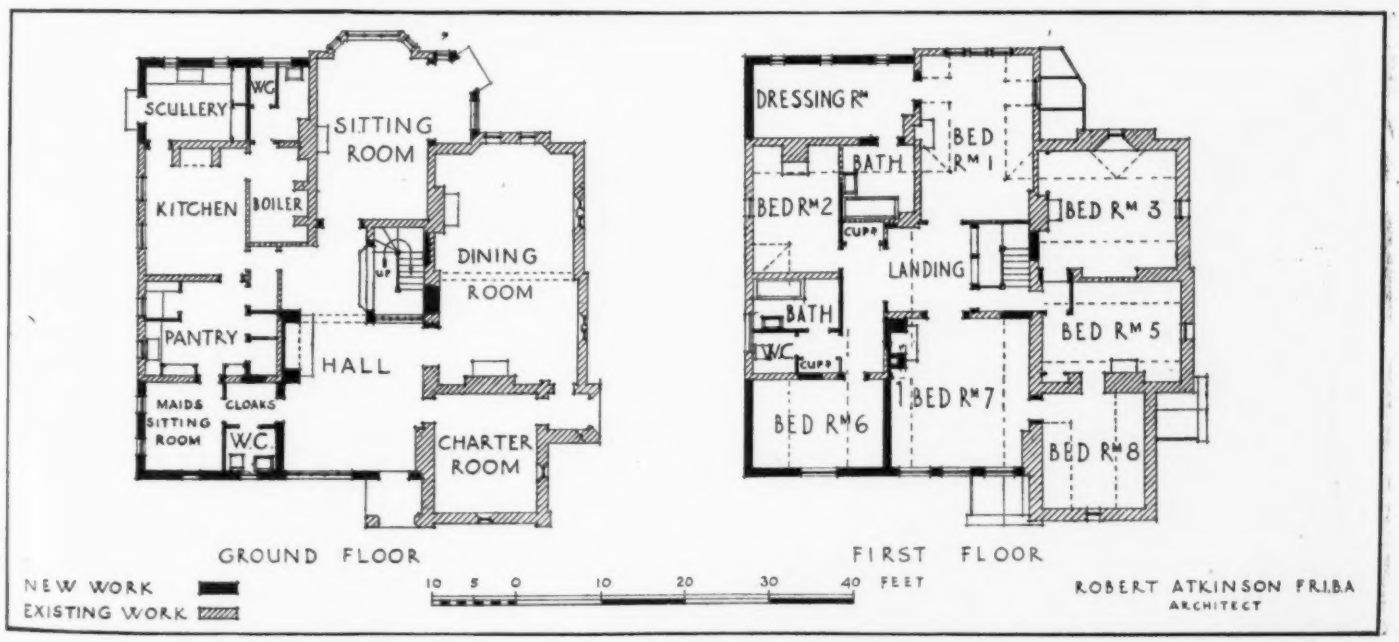
Long Crendon Manor, near Thame, Bucks: South Front. Mr. Philip Tilden, Architect.



"Magna Charta," Wraysbury: Alterations and Additions.
MR. ROBERT ATKINSON, F.R.I.B.A., Architect.

Top—DINING ROOM. SITTING ROOM.

Bottom—A GENERAL VIEW. BEDROOM NO. 1.



"Magna Charta," Wraysbury: Alterations and Additions.

MR. ROBERT ATKINSON, F.R.I.B.A., Architect.

GENERAL VIEW.

THE BOOKING HALL.

MAIN ENTRANCE.

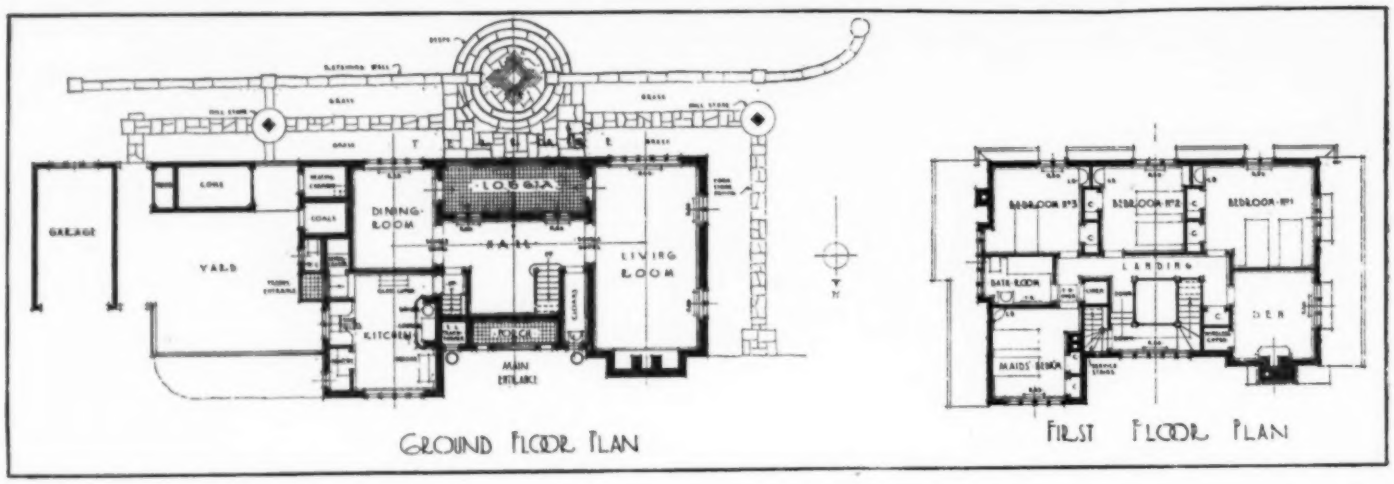
New Station at Margate, for the Southern Railway.

THE BOOKING HALL.

MAIN ENTRANCE.

New Station at Ramsgate, for the Southern Railway.

GARDEN FRONT.

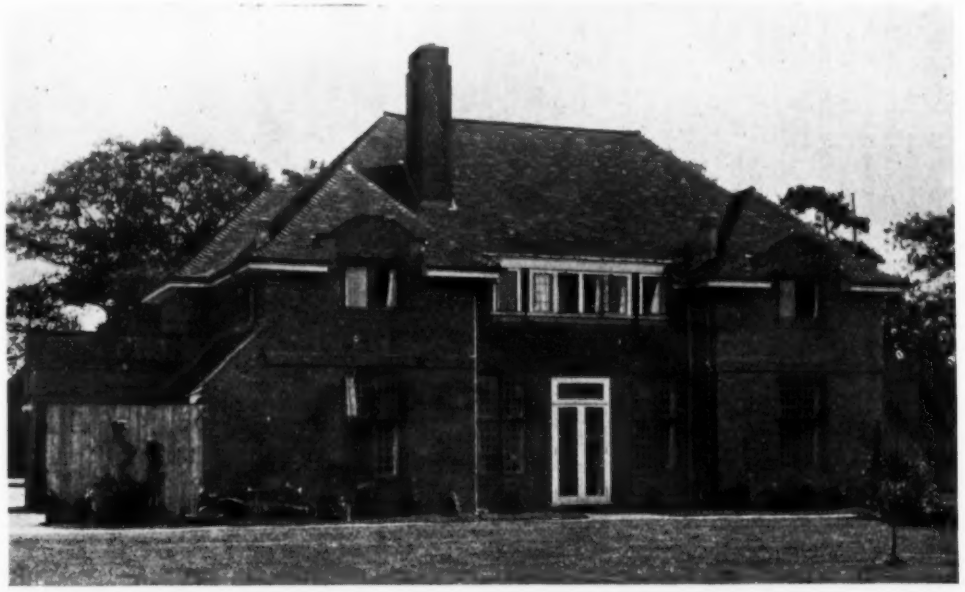


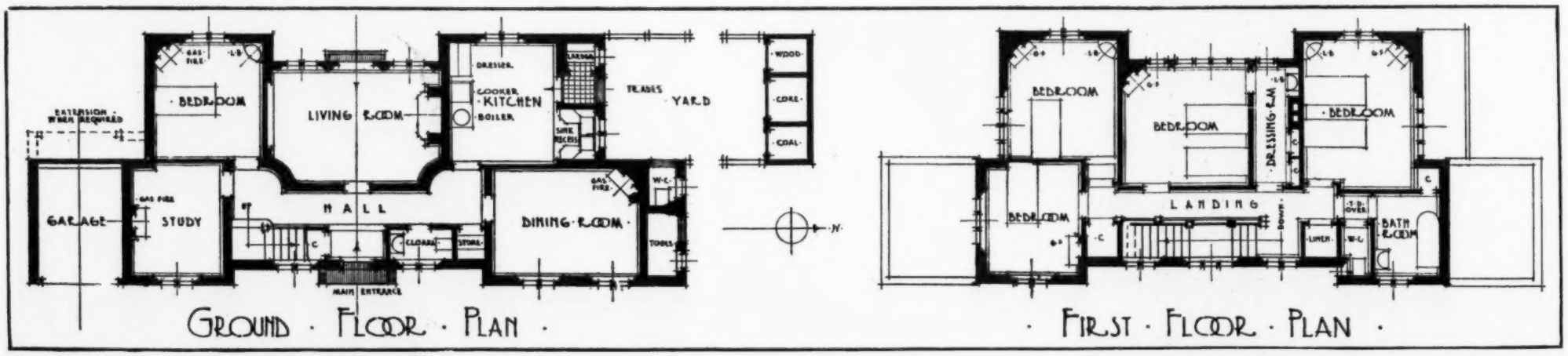
GROUND FLOOR PLAN

FIRST FLOOR PLAN

ENTRANCE FRONT.

"Four Winds," Bidborough, near Tonbridge, Kent. MESSRS. ARTHUR W. COOKSEY & PARTNERS, Architects.





The Vicarage, Hadlow, near Tonbridge, Kent. MESSRS. ARTHUR W. COOKSEY & PARTNERS, Architects.

ARCHITECTURAL STYLE*

EVERY reviewer, sooner or later, has to resist the temptation to criticise a book for not being some other book. Despite the title of this one, we would have preferred some other title—such as "The Grammar of Style." Or, to put it otherwise, we have enjoyed this book much more, we think, than if it had been confined to architectural style—or what we imagine to be architectural style. We have merely questioned the title, partly because the author himself, in the answer to one of his own questionnaires, is not particularly concerned about style or diversity in style, and partly because in his introduction, he makes it clear he is not discussing the sense, use, or function of architecture. The omission of these factors leaves the author free to discuss certain qualities in style. He discusses "the language of architecture, rather than the subject which is revealed by means of that language." Most of us, at some time or other, have tried to absorb a number of discourses on literary style, and at the end we have been told we were trying to beat the wind. Now this is precisely what Mr. Trystan Edwards does not do; he leaves us decidedly richer at the end. He has a good deal to say about the analogy of language, and we cannot do better than follow it up here. He leaves us with the impression that if the architect has never suffered from the leanness of his vocabulary, he has worked—until now—in ignorance of the grammatical use of the vocabulary.

Less than half-a-century ago, Matthew Arnold pressed for more and more grammar in the elementary schools; whereas now it is being realised that language comes first and grammar second. Many authorities are agreed upon the value of grammar taught at a later stage, when it is regarded as the science behind the art of literature and the practice of composition. It leads up to a critical examination of standard prose and standard poetry, and to the revision and correction of one's own writings. With this analogy in mind, we can visualise the influence upon the architect coming fresh to a study of Mr. Trystan Edwards' architectural grammar. To develop the analogy further, we do not imagine the author would maintain that grammar would give the architect ideas, or that it would give him words in which to express his ideas. What he can claim is that grammar will enable the architect to express his ideas correctly. It is possible we may be doing the author an injustice in stressing so much the question of grammar, especially when we feel compelled to admit that his grammar does suggest ideas.

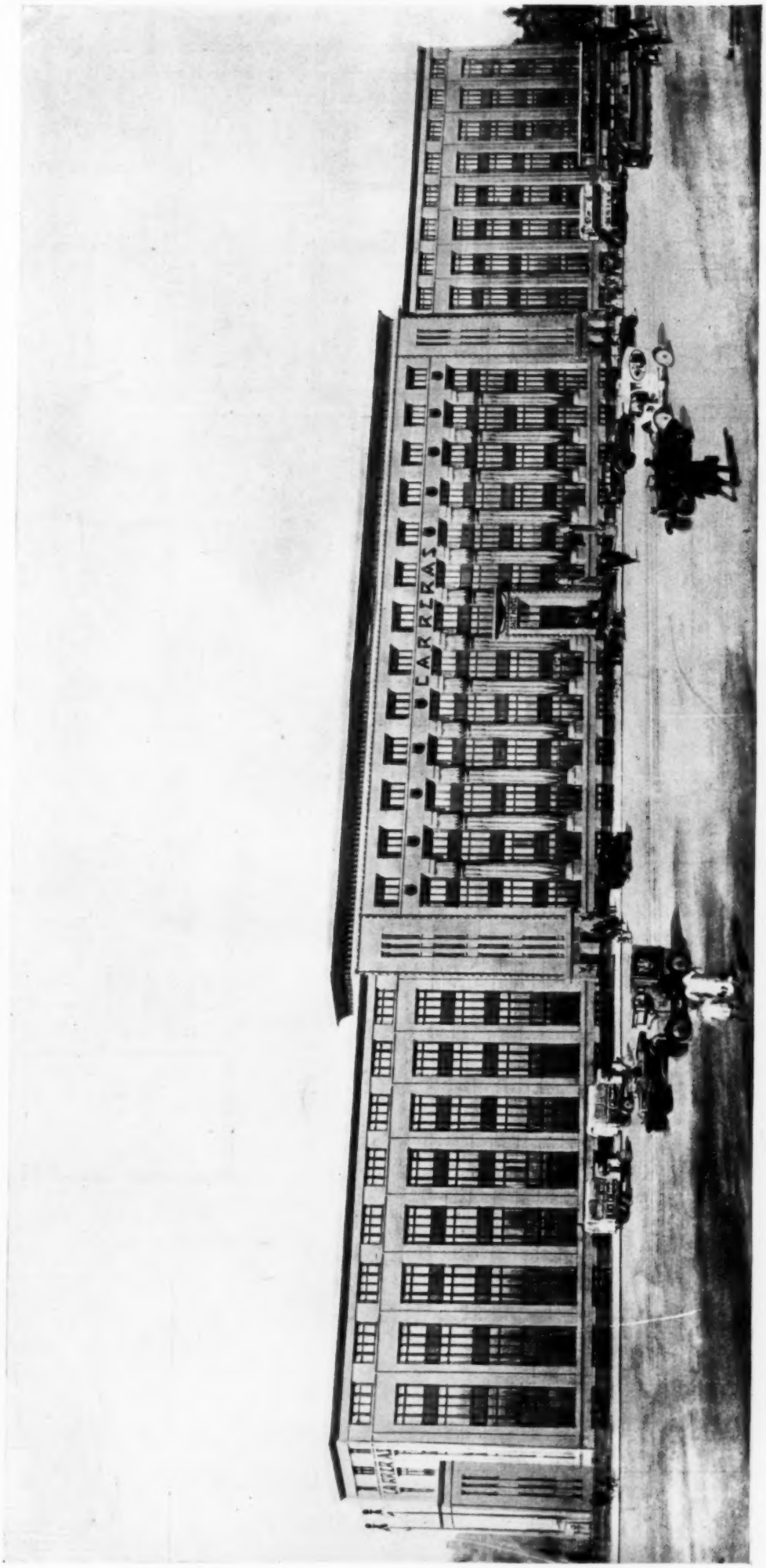
No doubt every one has a different conception of what he means by architectural grammar. If we regard the classic order in its completeness as a grammar, we can find the whole thing tacked on like a Latin tag to hundreds of buildings. On a much larger scale have we interpreted Mr. Trystan Edwards' conception of grammar. He deals with whole buildings and with groups of buildings. The classic order (our little grammar book) is but a small part of a design (and our mental outfit), and then it must be properly punctuated and inflected as a part of the complete design. His canons of Number, Punctuation and Inflection are entirely convincing. No one can have the slightest difficulty in following the carefully reasoned philosophy and argument, accompanied as they are with hundreds of sketches illustrating every step. It is certain that an application of the principles contained in this book would result in a measure of formal beauty, quite independent, as the author says, of the "style" of architecture in which the artist happens to be working.

The chapter on "Plan"—excellent as it undoubtedly is—is the only one which raises a question of doubt in our minds. Our range of vision on plan is not so comprehensive as our vision of a building in elevation. The value of inflection on plan is clear when we come to regard its effect in elevation, but it seems possible to apply a grammatical inflection (on opposite sides of a building, for instance), which could be realised only from an aeroplane. This, however, is a minor detail in an excellent contribution to the appreciation of architecture and the craft of building.

* By A. Trystan Edwards. (London: Faber & Gwyer.) 10s. 6d. net.

"Four Winds," Bidborough, near Tonbridge, Kent: Detail of Entrance.

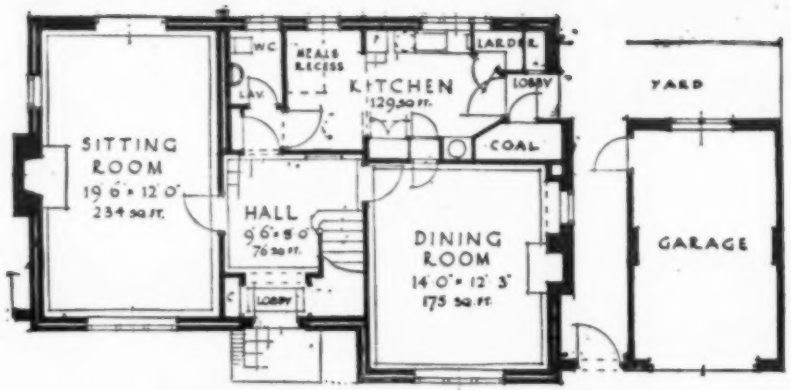
MESSRS. ARTHUR W. COOKSEY & PARTNERS, Architects.



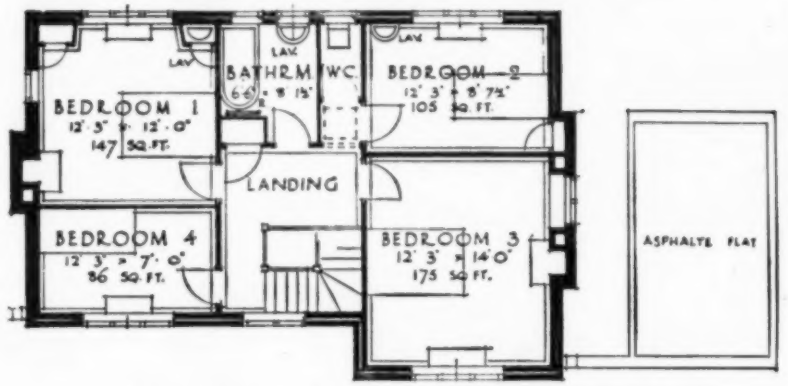
New Factory for Messrs. Carreras, Ltd., London.

MESSRS. M. E. & H. COLLINS, F. & A.R.I.B.A., Architects.

FIRST PREMIUM, CLASS "A": ELEVATION.

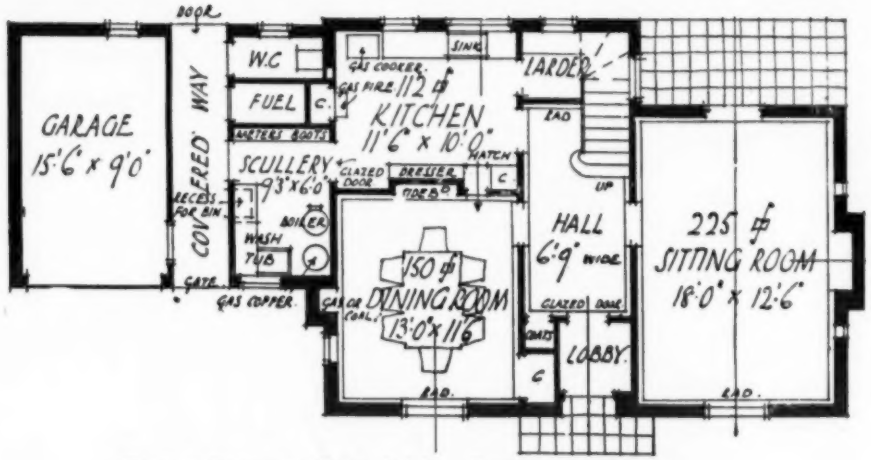


FIRST PREMIUM, CLASS "A": GROUND FLOOR PLAN.



FIRST PREMIUM, CLASS "A": FIRST FLOOR PLAN.

SECOND PREMIUM CLASS "A": ELEVATION.

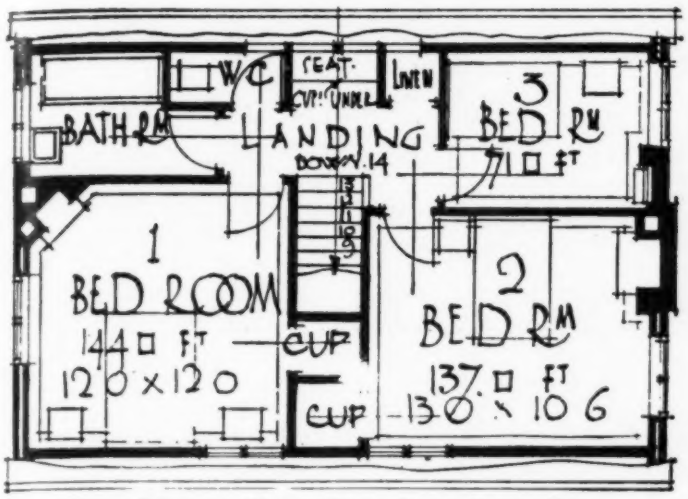


SECOND PREMIUM, CLASS "A": GROUND FLOOR PLAN.

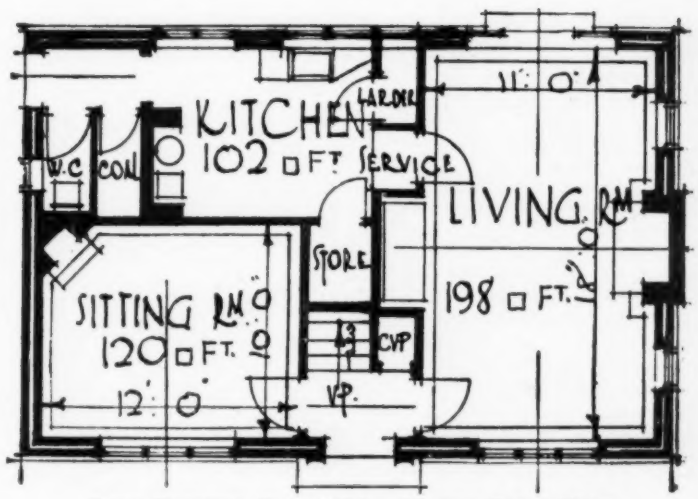
SECOND PREMIUM, CLASS "A": FIRST FLOOR PLAN.

"Daily Mail" Ideal Houses Competition.

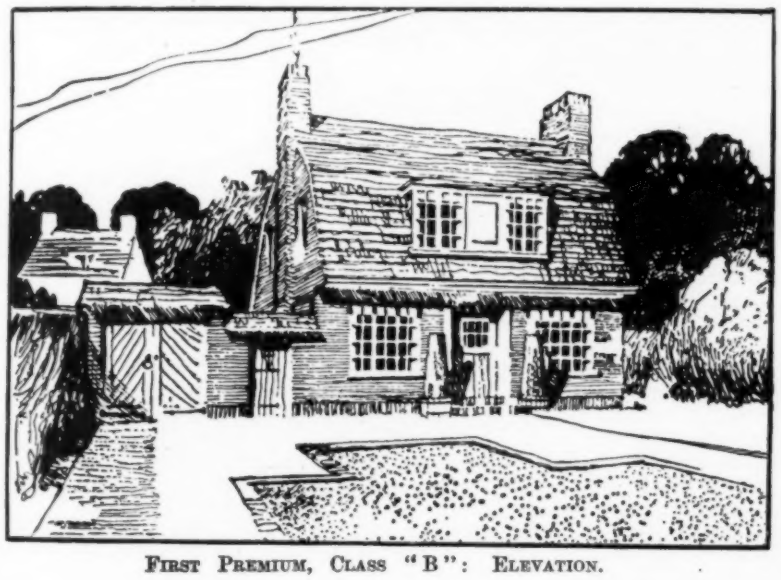
First Premiated Design, Class "A": MR. GORDON ALLEN, F.R.I.B.A. Second Premiated Design, Class "A": MR. DONALD H. MCMORRAN.



FIRST PREMIUM, CLASS "B": FIRST FLOOR PLAN.

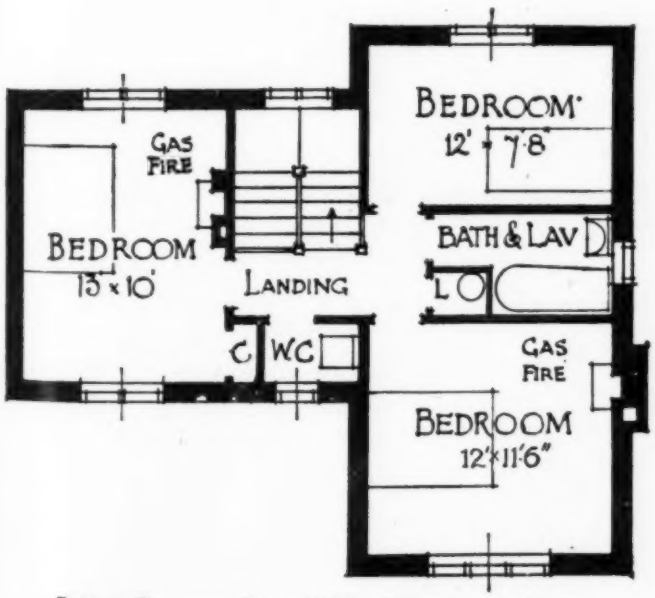


FIRST PREMIUM, CLASS "B": GROUND FLOOR PLAN.

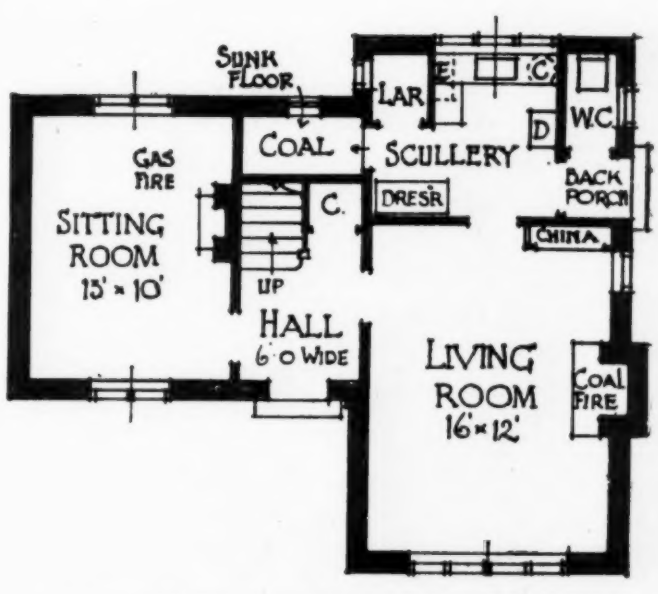


FIRST PREMIUM, CLASS "B": ELEVATION.

SECOND PREMIUM, CLASS "B": ELEVATION.



SECOND PREMIUM, CLASS "B": FIRST FLOOR PLAN.



SECOND PREMIUM, CLASS "B": GROUND FLOOR PLAN.

"Daily Mail" Ideal Houses Competition.

First Premiated Design, Class "B": MR. T. SCHAERER, L.R.I.B.A. Second Premiated Design, Class "B": MR. R. A. F. RIDING, A.R.I.B.A.

"DAILY MAIL" IDEAL HOUSES COMPETITION

WITH regard to this competition, the results of which we publish this week, we append part of the report of the assessors, Messrs. E. Guy Dawber, Louis de Soissons and C. W. Miskin.

Dealing first with Class "A," houses costing £1,500, the assessors state: "The design placed first submits a simple straighforward plan and elevation. The plan is compact, and the kitchen arrangements are well worked out, with this department well cut off from the rest of the house. The sanitary arrangements are combined in one group economically for the disposal of waste pipes and drainage, &c.

"The construction of the house has been well considered, with a simple straightforward roof, a number of the walls being carried up through the two floors, and care having been exercised in isolating the lavatory from the sitting-room with a hollow wall. The elevations are quietly and simply treated without any unnecessary ornament and would be well suited for any garden city or suburb development.

"The design placed second also shows a plain, straightforward plan, well arranged, with the exception of the kitchen, which opens direct into the hall, though being somewhat shielded from the stairs, this is not of very great importance in this particular instance. The design has been premiated because it shows a house of good character, with all the attributes of quiet simple architecture. The elevations are particularly happy, and show that this competitor has grasped the essentials of a simple house and not aimed at anything pretentious or to imitate a house of much larger scale.

"The design placed third is a good plan, and though the position of the larder in relation to the kitchen and hall could be improved, we consider the general lines of the design to be sound. The house could, with care, be built for the amount stipulated, but the adoption of parapet walls and copings to the roof adds to the cost unnecessarily.

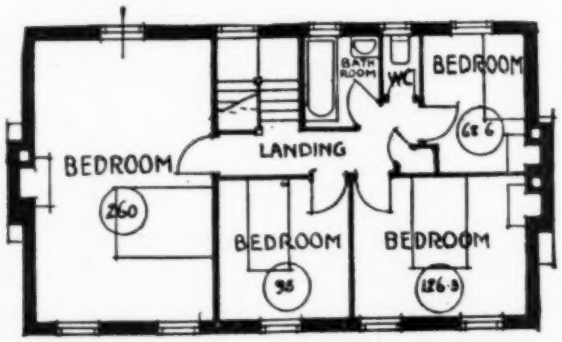
"Dealing with Class 'B' (Houses costing £850), we have placed the winner because of the general excellence of the main lines of the plan and the character of the small house expressed in the elevations. This is in every way an excellent design, giving all the accommodation asked for, well arranged, and treated in a pleasant manner. We feel that we must criticise the w.c.'s, which on both floors appear somewhat narrow, but this is only a matter of adjustment, and in no way upsets the general arrangements.

"The design placed second shows the value of the 'L'-shaped design to help the general grouping of the houses along the road. It is a plain straightforward plan and elevation all well arranged with the exception of the larder and coals, but here again it is simply a matter of adjustment. This design shows a particularly good bedroom plan.

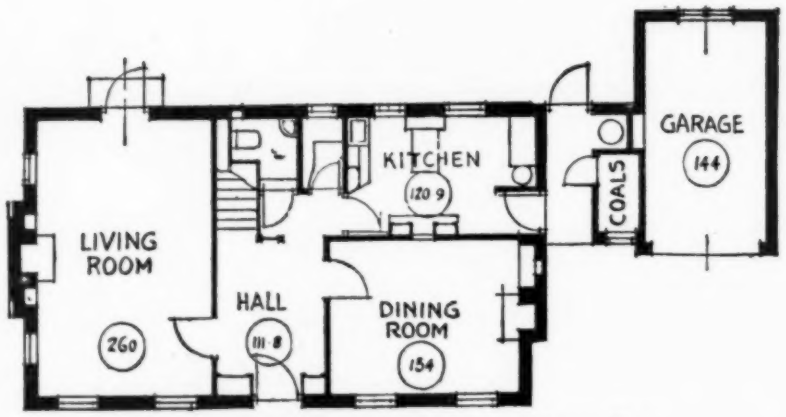
"The design placed third shows a very pleasing treatment in the character of the elevations, and is all that could be desired and expected in a small house of this type and cost."

Ancient Roman Houses.

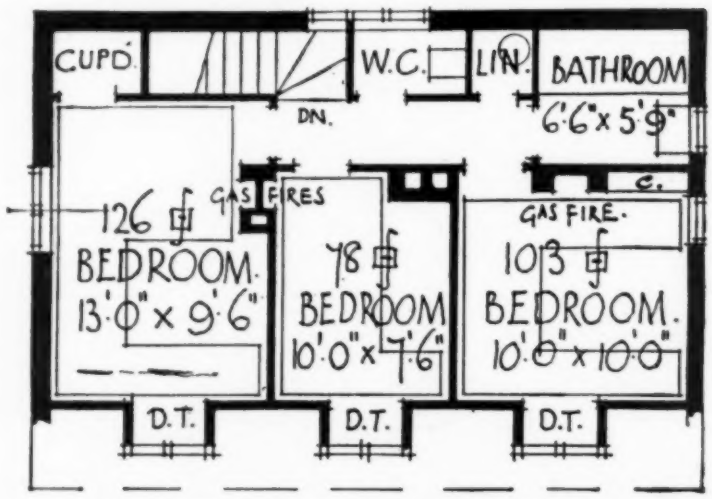
At the annual meeting of the subscribers to the Faculty of Archæology, History, and Letters of the British School at Rome, held at Burlington House, Piccadilly, Mr. Russell Meiggs, lately Pelham student of the school, gave an account, illustrated by lantern slides, of the excavations at Ostia. He said about a quarter of the town had been unearthed. He described how it was founded at the mouth of the Tiber to form a harbour for Rome. The excavations, he said, had shown the practical methods adopted by the Romans in planning the town. The houses were different from those of Pompeii, which had hitherto been taken as a type of a Roman house. They could imagine the houses at Ostia, with three and four stories, being modern in character. Many of them must have been let in flats, as they contained complete sets of rooms. There was a house of five stories with solid stone balconies. In many cases the ground floors of houses were used as shops.



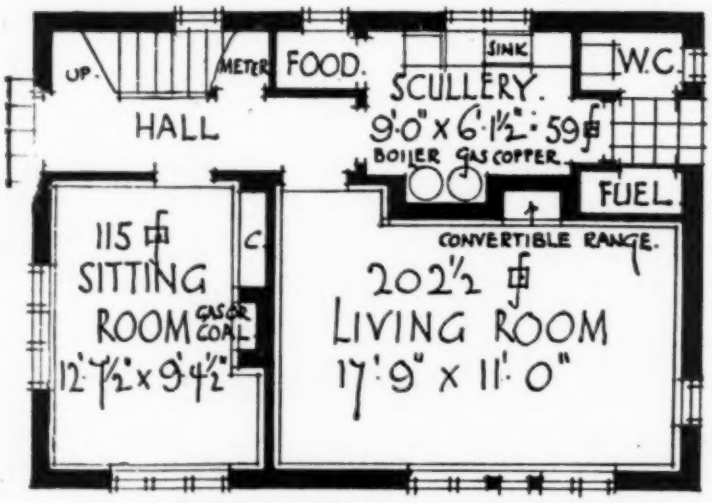
THIRD PREMIUM, CLASS "A": FIRST FLOOR PLAN.



THIRD PREMIUM, CLASS "A": GROUND FLOOR PLAN.



THIRD PREMIUM, CLASS "B": FIRST FLOOR PLAN.



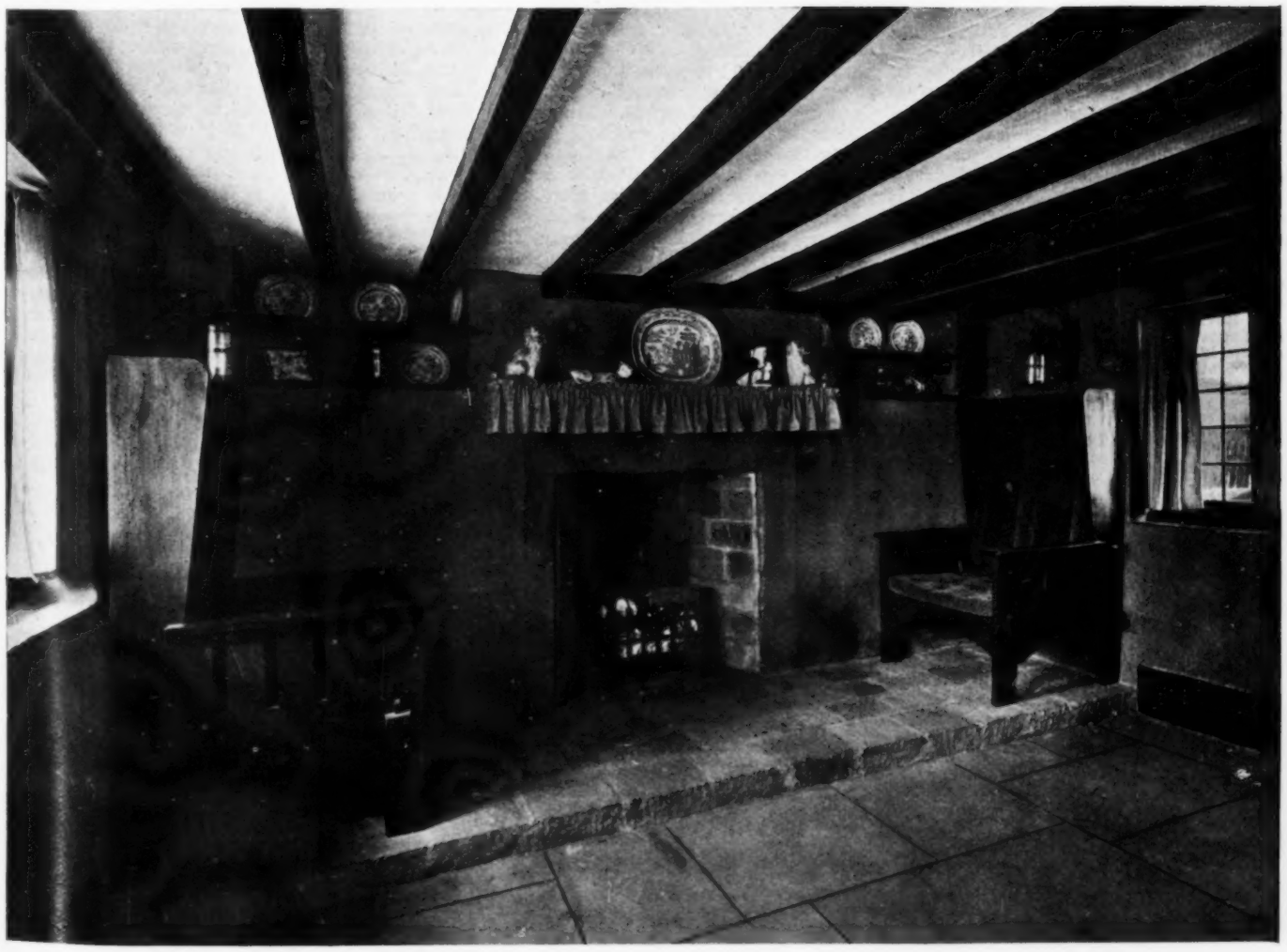
THIRD PREMIUM, CLASS "B": GROUND FLOOR PLAN.

"Daily Mail" Ideal Houses Competition.

Third Premiated Design, Class "A": MR. C. J. PICTON, A.R.I.B.A., and E. R. KNOTT, L.R.I.B.A.

Third Premiated Design, Class "B": MR. DONALD H. MCMORRAN.

THE EXTERIOR.



THE SMOKE ROOM.

Renovation of and Addition to Old Cottage, Vyner-road, Bidston, Cheshire.

MR. J. E. ROWLANDS, L.R.I.B.A., Architect.

THE MONUMENTS OF HUNTINGDONSHIRE*

THIS is the tenth of the series of volumes of the great survey of our national monuments published at prices varying from 13s. 6d. to 40s. We need hardly remind our readers that it is subsidised literature and that they may thankfully accept it as such. The volumes of the survey disarm criticism and eulogy is unnecessary where selection of subject matter, paper, printing, illustrating and general format are so good.

The terms of appointment of the Royal Commission, under date April, 1909, are that they "make an inventory of the Ancient and Historical Monuments and constructions connected with or illustrative of the contemporary culture, civilisation and conditions of life of the people of England, excluding Monmouthshire, from the earliest times to the year 1700, and to specify those which seem most worthy of preservation." The limit date of 1700 was extended to 1714 in an amended instruction (1913). This question of preservation in the case of Huntingdonshire, as in the previously published sections of the review, is placed well in the forefront, and the Commissioners recommend a very considerable list of monuments in the county of Huntingdonshire as "specially worthy of preservation," comprising seven items of earthworks and Roman remains, twenty-five parish churches and twenty secular buildings which include two castles (Kimbolton and Leighton Bromswold), a palace (Buckden), lesser houses, halls, manors, the remains of an abbey (Ramsey), and five ancient bridges.

The county of Huntingdonshire is made up of five "hundreds"—Norman Cross, Leightonstone, Harstington, the Borough of Huntingdon, and Toseland. There are one hundred and two parishes not counting Tilbrook, which, curiously enough, belongs to the hundred of Stodden, in Bedfordshire. The report records 1,221 monuments, an average of 12 monuments per parish. If we look for cathedral cities, we shall not find them in Huntingdonshire, but must seek them over the borders in Ely and Peterborough. Of abbeys there is but one, or the few original remnants of one, the Benedictine Abbey of Ramsey, founded by Ailwyn in 969 and dissolved in 1539, when it passed into the hands of Sir Richard Williams (*alias* Cromwell). Near by the site of Ramsey Abbey Church stands Ramsey's parish church dedicated to Saint Thomas of Canterbury (*c.* 1180 and later) and as an earnest of the quality of the volume from the archæologist's point of view, the following short excerpt will suffice: "The chancel has a quadripartite vault of rubble with plain square diagonal ribs springing in the eastern angles from restored attached shafts with cushion-capitals, and on the W. from the side-shafts of the responds of the chancel-arch; the crown of the vault drops towards the N. and S. in the manner known as Angevin."

"The manner known as Angevin" is just what we should expect in a church dedicated to Becket and built in the last years of his great friend and enemy, Henry of Anjou. The chancel vaulting is reminiscent of that in Henry's own hospital at Angers, and there is also a corresponding feature in the splayed single-light windows. At the time Henry II was building his hospital (1177–1184) he was holding his court at Angers, and the English as well as the Norman prelates were going backwards and forwards, and doubtless one or other brought home the idea for this new departure in vaulting and wedded it to earlier forms of arcading which we see in the nave at Ramsey. Instead of Ramsey's massive pillars and cushion-capitals, at Angers hospital we find slender circular columns with delicately foliated capitals.

A popular county guide book would, in all probability, dismiss Ramsey's parish church in a few bald sentences, stating that it is a fairly well preserved building of late twelfth century architecture, with the usual transitional features from late Norman to Early English Gothic and later fourteenth to sixteenth century additions and restorations, and a west tower constructed about 1672, adding a stray word, perhaps, to a font of dark grey marble of late twelfth or early thirteenth century, and a passing reference to a partly restored lectern of the fifteenth century. On the other hand, the survey devotes nearly three pages to a careful analysis of this church, in addition to three full-page views of the interior and exterior together with a plan and smaller illustrations of sundry details. We are told that "From the unusual features of the plan it appears almost certain that the building was designed as a hospital, infirmary and guesthouse, or at any rate, was built on the plan of such a building and not that of a parish church; it conforms in every particular including the lack of a tower (in the original plan), to the most normal arrangement of a mediæval hospital, the 'nave' forming the hall of the establishment and the 'chancel' the chapel. It is quite possible that the hospital became a parish church in the fourteenth century, or even earlier," and so on with references in comparison with Newark Abbey at Leicester and the recovered plan of Sawtry Abbey.

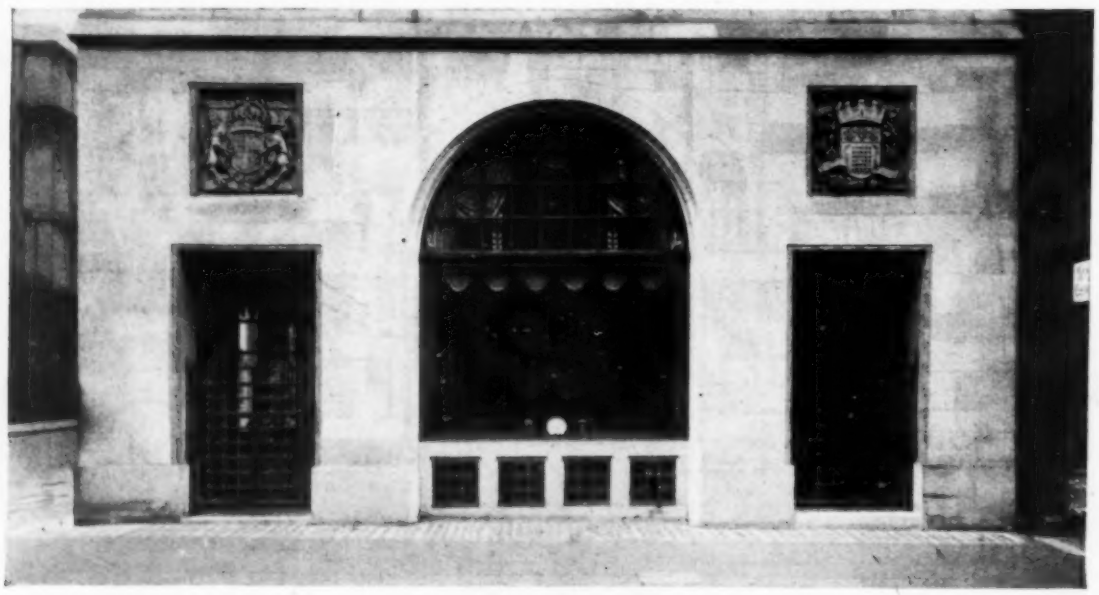
The selection of Ramsey as illustrating the methods of the Commission will not raise any feeling of jealousy on the part of dwellers in Huntingdon, St. Ives, Godmanchester, or any of the hundred-and-two parishes in the county. Incidentally, mentioning Godmanchester, there, in its parish church, will be found a great wealth of fifteenth century carving—bench ends and complete stars with a fine series of misericords, many of which "details" are reproduced in the book. Huntingdon is rich in quite fine churches: three at least retain structural remains of the Saxon period, and whilst complete buildings of late eleventh and twelfth centuries are comparatively scarce, there are many of thirteenth to fifteenth century in excellent preservation. A striking feature of the level landscape is the tall octagonal broach-spires with their delightful traceried and gabled lights. It is a county of fine towers and spires, and as, on a rough computation, there must be a church to every six square miles, the Sabbath day must be musical with bells.

"The cultural level of the population," we are told, "had probably varied but little for many centuries before the coming of the Romans. It was, indeed, imposed by exacting physiographical conditions, which the modern eye must to some extent reconstruct. Apart from the gravel terraces bordering the river systems, practically the whole county consists of claylands, doubtless then densely forested, with a fringe of fen land on the east"; and as dry and habitable areas were few and far between, ambitious immigrants from neighbouring districts were naturally few, and the fen-bound and forest-covered regions afforded little opportunity for the acquisition of wealth and political power. But that is not to say that the Roman invasion left Huntingdonshire untouched; and the Imperial legions have left us one great "monument" in that section of Ermine-street which traverses the county practically from north to south.

It takes many minds to make a community, and the part is not greater than the whole in the composition of a countryside. If Huntingdonshire is one of the minor counties of England, it still behoves us to know it and to know it intimately. It has its simple beauties of flood and field, and it is a country of vast solitudes where, in places, the horizon is seemingly infinite. But it is a county of much architectural and archæological interest, and the able "survey" before us will well repay a careful perusal of its pages.

The volume contains 350 pp. of letterpress (properly indexed), 166 plates from photographs representing several hundreds of "monuments" of various kinds, a large number of plans in the text and a key map of the county.

* THE ROYAL COMMISSION ON HISTORICAL MONUMENTS (ENGLAND). An Inventory of the Historical Monuments in Huntingdonshire. Published by His Majesty's Stationery Office. £1 15s. net.



New Premises for Messrs. Atkinson's, Old Bond-street: Detail of Shop Front.

MR. E. VINCENT HARRIS, Architect. (*See p.* 87.)

THE WORK OF THE ARCHITECT

By T. P. BENNETT, F.R.I.B.A., Hon. F.I.O.B., Hon. F.I.B.D.

THE work of few men in any calling can be so diverse as that of the architect. His outlook must embrace artistic, theoretical and practical knowledge, and behind the actual production of his buildings must lie real ability to appreciate the conditions under which he is living and the people amongst whom he moves and works.

HUMANISM.—Because of its indefinite character, it is interesting at first to realise something of the psychological aspect of building. It means that the architect must be able to visualise the general trend of contemporary life, to foresee points which his clients will expect to find adequately provided for in a new building, to know by instinct or by examination the features which are regarded as of paramount value to the user of the building, and this involves real ability to appreciate the methods of living and the ideals of the members of all classes of the community. It means that the architect must be able to put into perspective the Conservative, Communistic, Socialistic and the Liberal views of separate classes of a nation and must be able to deduce from this mass of individual opinion the general trend of contemporary thought.

Not only is it necessary to appreciate the standard of living of the mass of the people, it is essential that the architect should be able to establish sympathy with any particular outlook, to know whether a man in his home or business environment wishes to emphasise his reticence in decoration or the importance of his social position, to design a building which really expresses the individuality of its owner. The architect must be able to work with men and women of a great number of social grades. He will come constantly into contact with men of culture and intellect, with pure business men and women, with artists, with tradesmen, contractors, clerks of works, foremen, artisans and labourers, each of whom will have his particular portion of the work to perform. Co-operation of all is necessary if the building is finally to achieve distinction as a work of art. The architect becomes a great conductor producing music from this diversified collection of players.

PROCESSES.—Turning from this study of human nature, it is next necessary to have an accurate working knowledge of the building which is being designed; to know the exact processes which it will house; to have first-hand knowledge of their inter-relation, and in many cases to discriminate with fine distinction between parallel processes which superficially appear to be the same. Thus the successful house designed for a craftsman or a miner or labourer will have difference of planning and will be different in appearance from that designed for a man earning a similar income but possessing a different social outlook. The suburban house will differ in many essentials from the town house, and houses in Mayfair will differ from those in Kensington, while the translation of domestic requirements from houses into flats will bring into prominence subsidiary social habits which affect planning. Assuming that the work of an architect is not confined to the production of one class of building, he will need to have an accurate knowledge of the working of other industries; thus the retail shop will need a particular knowledge of retail trade.

A curious inter-relation of facts comes into light in connection with width of road, width of pavement, aspect, length of shop, the design of the window, the design of arcades, entrances to and disposal of the upper parts, the heights floor to floor, the use of the basement, and other features, while the planning of the factory, theatre or cinema will similarly involve first-hand, accurate, and unmistakable knowledge of the habits of the playgoer and of the actor. Perhaps at times the architect too lightly accepts the supposedly accurate knowledge of the users of these buildings, only to find that in many instances that knowledge has arisen from habit in an old building and is a very precarious guide to the layout of a new structure unhampered by incidental circumstances which in older premises have become part of the working arrangements with which the user is familiar.

DRAUGHTSMANSHIP.—Draughtsmanship springs into prominence at an early stage in the education of an architect, and because of this prominence it is easy to place too great an importance upon the high standards which modern work demands. Draughtsmanship is important because it is the handmaid of production. It is, to the architect, the means by which he crystallises his ideas. He must be able to transfer to paper a fleeting impression, an imperfect idea, a half-formed vision of a completed building as soon as it is focussed in his mind's eye. A halting facility with pencil, pen or brush impedes the work of the brain and interrupts the flow of ideas. Rapid draughtsmanship and fine drawing are a necessity to the designer. They do not in themselves produce good design, neither do they make a designer. The brilliant draughtsman is attended by unmistakable risks. His ability to draw may lead him to disguise the shortcomings of his own composition and detail and produce a good drawing rather than a good design. Lack of balance in the building may be hidden by false balance in the drawing; it is so easy for the perspective artist to add irresponsible subsidiary features to the composition, such as trees or motor-cars or people, and thereby supply a focus which the architectural composition lacks. Draughtsmanship, in other words, is an indispensable handmaid but an extremely dangerous master.

ELEMENTS.—In the background of the brain of the architect there must be a real understanding of the importance and effect of a large number of facts which will have a very substantial bearing upon the final architectural production. These facts have varying degrees of importance and varying effects upon the architectural conception according to the type of building which is under discussion, the position in which the building is to be erected and many other extraneous circumstances. It is left to the architectural sense of the architect to give to each its proper weight and proportion for the particular scheme in hand.

In some periods of architectural history attempts have been made to ignore some or all of these elements, and while in such cases it would be untrue to say that the result has been disastrous, it must, nevertheless, be accepted that in so far as they have been disregarded the production of a perfect building has been rendered impossible.

(*a*) Climate.—The first, and one of the most important, of these elements is climate. Climate is often given too little importance in the building. It is climate which dictates the size of the windows, the amount of the opening space, the form of the roof, the introduction or otherwise of the arcade and the portico, and in many cases determines the thickness of the walls. Climate is an indeterminate element which may or may not dictate the use of a particular feature, but which is nevertheless a governing factor in the design of every building.

(*b*) Construction.—The second element which is of very great importance is that of the construction of the building. It is possible that Greek building is the only perfect example of trabeated and Gothic building of arcuated masonry construction, and if this is so then these are the only groups of buildings in Western European architecture which completely fulfil the demands of constructional expression. Such a narrow view of structural permissibility would be so severe as to eliminate many acknowledged architectural masterpieces, and therefore the term "constructural limitations" must be imposed with very careful reservations.

Construction must be the servant of the design and not its master. It must therefore be legitimate to use construction in any way which serves the end of the design, but if a certain limit of reasonableness is passed and steel, concrete, stone, brick or wood are so distorted in their method of application as to absorb abnormal cost or obviously wasteful construction, they offend the sense of fitness of the designer, and when pressed beyond certain points must be regarded as architectural defects of a serious character.

(*c*) Mechanical Equipment.—The modern building houses in many cases a large amount of mechanical equipment, which may have an important bearing upon the design of the building; thus the great ventilating trunk of a Plenum system should not be a mere engineering device on the face of the wall but should be incorporated in the decoration in such a way that it becomes part of the scheme of the interior. Radiators have for a long time been merely placed on the floor and hidden as far as may be with a coat of paint. Thus to handle ventilating and heating adjuncts is not, strictly speaking, architectural, and in so far as these units have failed to be incorporated in the architectural scheme the latter must be considered to be incomplete.

(*d*) By-laws.—A further element ever present with the architect, especially in important towns, is the limiting effect of by-laws. By-laws may be mere superficial rules leaving the whole of the decision with regard to construction to the local surveyor, or they may consist of an elaborate code, such as that incorporated in the London Building Act, which will govern the plan, elevation and lay-out of the design from first to last.

(*e*) Finance.—A further element of design in building is found in dealing with the financial aspect of the scheme. It must be wrong to disregard finance. The simple house or cottage is found to be good partly because it adequately recognises the restriction of money. Financial possibilities are present in some form or another in every class of building, and consciously or unconsciously they affect the design.

(*f*) Site, Land, Aspect, etc.—Finally, there are restrictions of site, of level, of aspect, and of surroundings which have their reflex action upon every new work of architecture which arises in their midst. With these aspects of humanism, these details of working arrangements and these diverse elements at the back of his brain, the architect sets to work to produce—

THE DESIGN.—Design is rightly accepted as the real basis of architecture. Design is the production of the particular form of a particular building. It may be summarised as a crystallisation of facts made beautiful, but it embraces so many facts or features that any brief summary, however apposite, is almost bound to be misleading. The design must be supreme in fitness and suitability. It must obviously be in the realm of the practical. It must be produced with economy of effort. The finished façade must appear to be the result of spontaneous thought, and although it may have solved many exceedingly difficult practical problems it is an axiom that it must possess in apparently effortless serenity the elements of beauty.

(*To be concluded.*)

New Venice Bridge.

A proposal is understood to have been placed before the Venetian Council for the construction of an ornamental stone bridge in place of the iron structure that spans the Grand Canal between the Campo San Vitale and the Academy of Fine Arts. The present bridge, which spoils one of the most charming stretches of the canal, and which is entirely unsuitable for modern traffic requirements, was built about half a century ago, and every year much money has to be spent on repairs. The proposed new bridge, which would be wider than the Rialto and would be nearly 28 ft. high, has been planned by Signor E. Fagiuoli and the design has been favourably received in artistic circles in Venice.

THE REPAIR OF ANCIENT BRIDGES

By WILLIAM HARVEY.

In bridge building two conflicting interests have to be reconciled, for the designer has to provide free and sufficient space on the roadway over the bridge for the traffic of the district, and a clear waterway below the arches supporting the road. In almost all aspects of the case these two considerations govern the shape of the finished work, and ancient bridges often charm as much by their admirable disposition of structural strength, appropriate to their old-world uses, as by the beauty of their detail and the colour that has been applied to their mouldering stones by weather and lichen.

To effect a balance between facilities for road travel and water flow is never altogether easy. To span the stream in a single arch may mean a steep rise in the road up to its summit, or, if the road is made level, it may imply the provision of a dangerously flat arch, or of a series of arches of excellent shape, perhaps, whose supporting piers obstruct navigation and impede the flow of the river. Viewed from the standpoint of liability to decay the bridge is seen to be exposed to several dangers which will bring about its downfall in process of time. The materials are subjected to wet under water level and to varying degrees of dampness above, but beside this frequent cause of decay, the piers may be battered in flood time by floating objects, or pressed upon by ice as it forms—and expands as it forms—during frosts.

An even more severe and insidious cause of decay is the scouring away of the river bed from between the piers which leaves their foundations deprived of lateral support and free to squeeze out under the load. With arch pressures to be resisted and water pressures to be met, the bridge may well require periodical repair to keep it in service, and as a matter of fact, old bridges do require repairs of the most varied description.

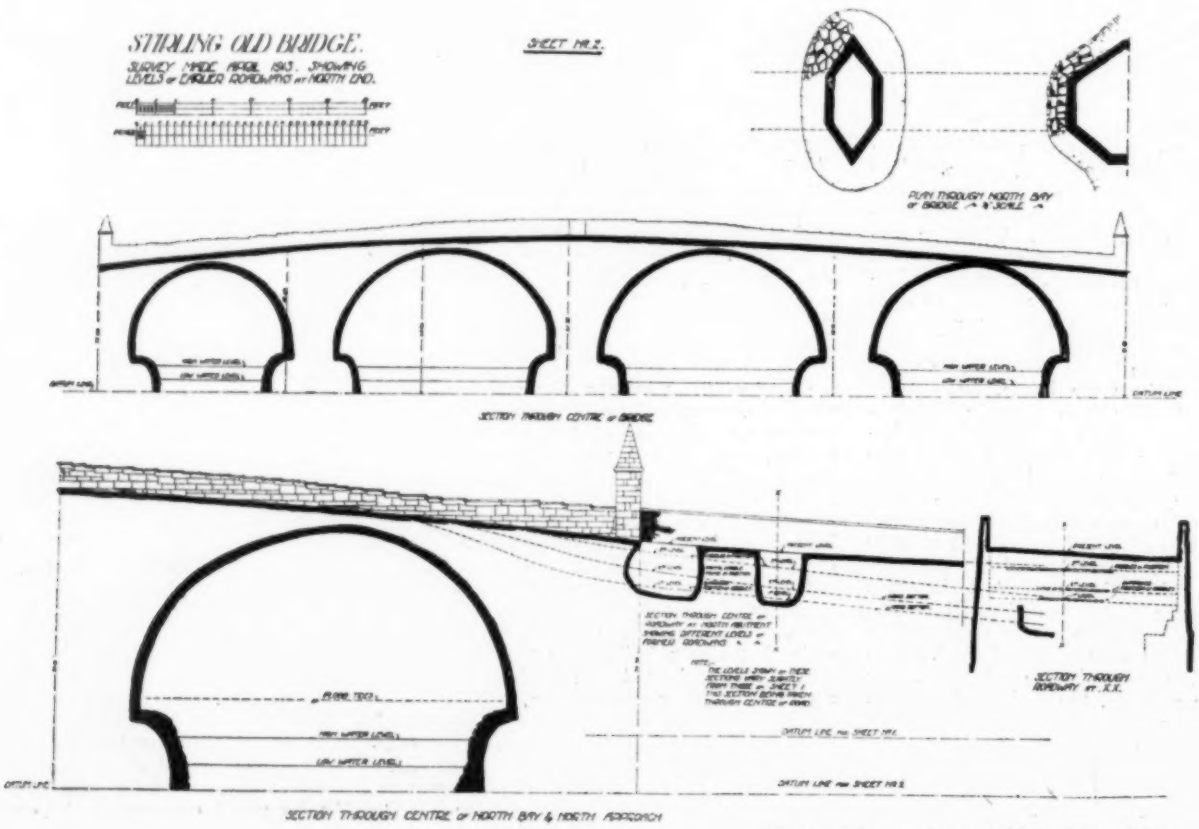
Old London Bridge suffered continually from the erosion of the river bed by the violent tides which scoured away material from between the foundations of the piers. This old Gothic construction of "nineteen great stone arches secured by piles of timber drove to the bottom of the river, having a drawbridge towards Southwark," took up such a large proportion of the waterway with its many piers and the sterlings upon which they were founded that it had the effect of a dam and held up several feet of water.

The result was that at particular states of every tide the flow amounted to a waterfall with swirling eddies which sucked deep pits near the piers and deposited dangerous banks of sediment at a little distance from the bridge. So vigorous was the scouring action that after a new great central arch had been erected in 1759 in place of two old ones, the supporting piers were found to be in danger of subsiding into the pits in the river bottom. In this emergency John Smeaton, the celebrated engineer, was instantly summoned express from Yorkshire to relieve the difficulty. Coming almost immediately after his triumphant completion of the third Eddystone Lighthouse, this appeal to a man who had experienced the ways of running water was made with the utmost confidence, and his advice was accepted and acted upon the same day that it was given. The old City Gates had been demolished some months previously, but at Smeaton's instructions the stonework was brought back "and the work commenced immediately, although it was Sunday morning." Thousands of tons of rubble stone were brought to the spot and thrown into the pit to form a level and fairly smooth bed for the river between the two piers most heavily loaded by the "new" great arch. This precautionary repair of the foundation executed in 1761 was insufficient to prevent great damage by high tides, and by the pressure of ice in the early part of 1763, when parts of the ancient sterlings were washed away from around the bases of the piers whose foundations on the dry chalk rubble of the sterlings were exposed. It cost £6,800 to repair the damage.

A severe frost in 1768 had somewhat similar effects, and a great many tons of Kentish rag-stones were again thrown down beneath the great central arch. The temporary nature of the benefit and the permanent danger to navigation which these elementary repairs produced soon became apparent, though it is probable that without them the ill-founded old bridge would have subsided and crumbled to pieces, just as Waterloo Bridge is doing at the present day. The vigilance of the surveyors who noticed the erosion and plumbed the depth of the river bottom in time to prevent disaster was certainly to be commended, even when the measures of repair were of limited efficiency. Lack of cohesion in the mass of rubble at the river bed was at last recognised as the reason for its rapid erosion, and in 1793 and 1794 nine baulks of strong timber were sunk down to the river bed between the sterlings of the piers of the centre arch. These beams were held in place by upright timbers at their ends, but the device was only partially successful, for only two of the beams were found in place in 1799 when the work was surveyed by George Dance. The good effect of continual attention to the duty of surveying and making minor repairs on the principle of the "stitch in time" is to be gleaned from the fact that the great arch had only subsided 2½ in. in the centre of its span when it was surveyed by Francis Giles in 1821.

In this case of old London Bridge the question of architectural style did not enter into the problem. It is true that the "new" great arch of 1759 was supposed to be in the Gothic style, but its Gothic character was only nominal. Repairs to the sterlings were also opportunist patchings in the form of added timbers or added filling of chalk as the immediate needs of the moment suggested. The actual size of the sterlings increased as time progressed and as new layers of piles accumulated about the existing old ones which were seldom taken out for fear of weakening the foundation. As a consequence, the sterlings became increasingly obstacles to navigation. Partly because their great projection contracted the channels, and partly because boats became stranded on their shelf-like tops and fell off the shelf as the tide ebbed.

Repairs which are designed and executed in such a manner as to retain the original shape and character of the bridge, and to preserve


STIRLING OLD BRIDGE.
SURVEY MADE ABOUT 1913. SHOWING LEVELS OF EARLIER ROADWAYS AT NORTH END.
SHEET No. 2.
PLAN THROUGH NORTH BAY OF BRIDGE
SECTION THROUGH CENTRE OF BRIDGE
SECTION THROUGH CENTRE OF ROADWAY AT NORTH ABUTMENT SHOWING DIFFERENT LEVELS OF PAVED GROUNDS
SECTION THROUGH ROADWAY AT X.X.
SECTION THROUGH CENTRE OF NORTH BAY & NORTH APPROACH

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Stirling Old Bridge: Record of Investigations in connection with the repair of the structure.

IN PROCESS OF BEING GROUTED AND POINTED.

NEW COBBLE PAVING IN HARMONY WITH ANCIENT WORK.

Stirling Old Bridge.

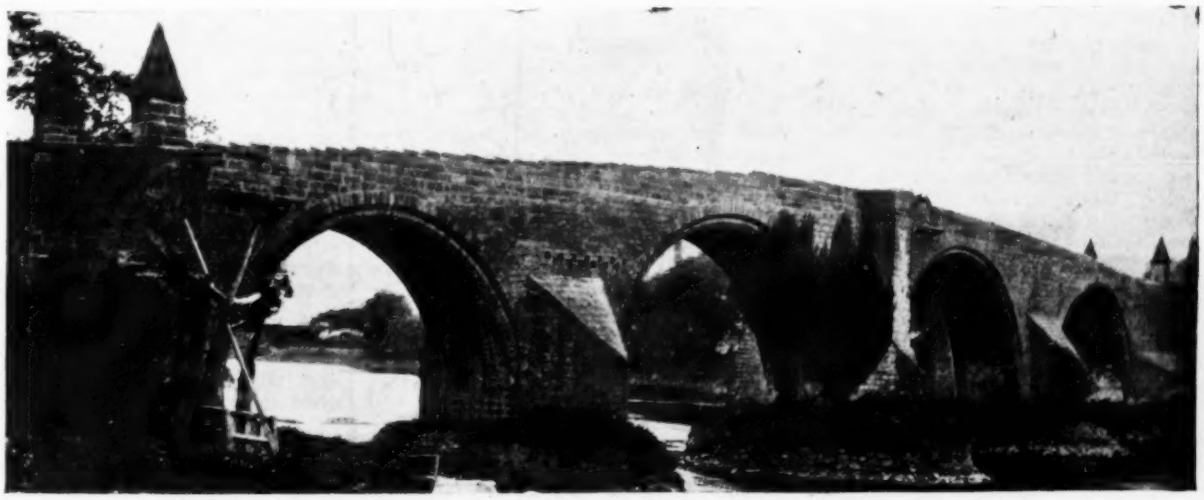
its actual material are far from common, and are only applied in cases where the old bridge is recognised as a monument of great historical or artistic importance.

In these cases, the opportunist regime of temporary patching cannot be relied upon, and a considered scheme is prepared at the beginning of the repairs in strict reference to the principle of retaining all ancient work in place and adding only the minimum of new material where it will be as little conspicuous as possible. To ensure that such a scheme shall do justice to the structural as well as the artistic character of the decaying bridge, it is absolutely necessary that every source of weakness shall be fully understood at the commencement. To this end the work is surveyed in a specially minute manner and all its deflections and fractures are recorded on the survey drawings. To a certain extent, the process of surveying and drawing out elaborate plans, elevations and sections, reveals the nature of the forces at work. There is a reason for every bulge and crack, and before a cure is attempted it is necessary to determine what forces are at work producing the defects. The stresses in the structure are carefully analysed and the results of theoretical calculation are critically examined on the work. The continuous nature of decay and the effects of time have also to be considered in connection with bridge repairs, though they are but poorly represented in the formulæ contained in the usual text-books on constructional science, and a long view must be taken in order that the repairs may be effective over a period of years proportionate to their cost. Even the most satisfactory and scientifically applied repairs will require periodical renewal, for the water pressures being continually re-applied, there is a definite cause for further damage and a need for continual vigilance.

Stirling Old Bridge repaired by H.M.O.W. Historic Buildings Branch may be taken as a good example of the modern scientific repairs which may be applied in cases where the ancient appearance is to be preserved. The size of the bridge and its state of dilapidation were such as to bring it just within the scope of the power of cement grout to provide adequate coherence to the old masonry without resort to tensile reinforcement, though very considerable quantities of whinstone rubble were used in making good pits in the river bed and in rebuilding parts of the old sterlings where they had been washed away by the force of the current. The depth of water varies from 15 ft. at the end of the ebb in dry weather to between 30 and 40 ft. at high floods, so that the sterlings and the piers are subjected to very considerable pressure, though there is nothing comparable to the definite waterfall of old London Bridge. But in addition to the decay of the piers and their foundations, the arches, the spandril walls, parapets, and the retaining walls of the north and south approach roads all showed signs of dilapidation. The earth filling below the cobble-paved roadway was pushing out the face walls at several places, though not to such an extent as would make re-building imperative. To preserve the bridge with all its antique character and yet to re-establish its structural strength, it was decided to make it as nearly monolithic as possible by the help of cement grout and by such necessary re-building of defective portions as could not be avoided. No single pier seemed to be in urgent need of underpinning when the bridge was examined, but defects in every part required attention if subsidence and piecemeal disintegration were to be avoided in future.

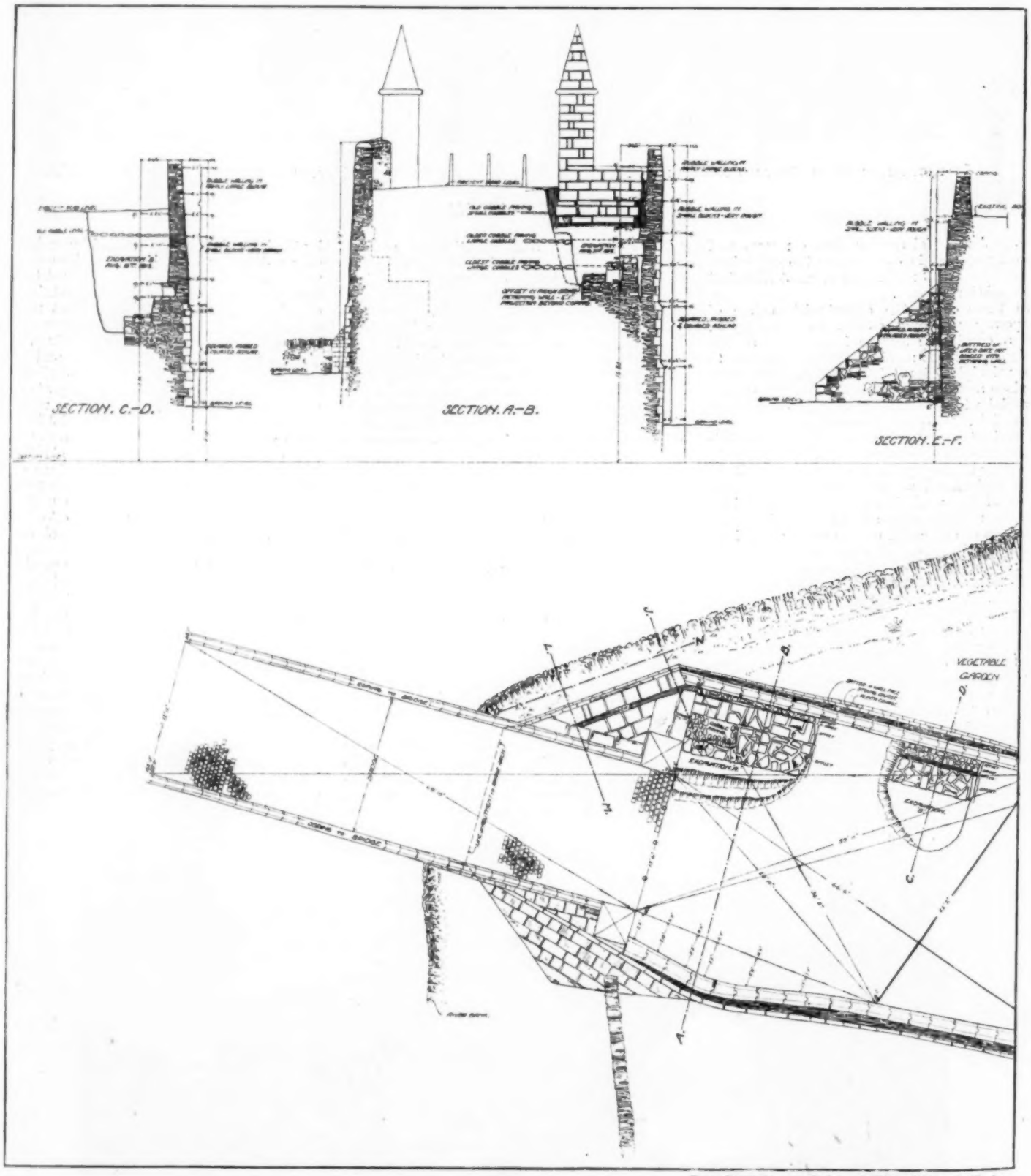
As a great many of the cracks and bulges were of such a nature as might be attributed to the denudation of material from all parts of the work, it appeared probable that the reinstatement of sufficient sound new material in every place where old had been washed away might prove sufficient to stabilise the old bridge. A scheme for surrounding the sterlings of the bridge piers with sheet piling was formulated, but was purposely held in reserve until time should have shown the measure of effectiveness obtainable by the process of internal consolidation.

One cause of trouble that was revealed by careful enquiry was the increased weight of the road filling above its original level. The spandril walls and the retaining walls of the inclined approach roads were severely stressed by lateral pressures applied by the retained earth and were found to have bulged outwards in response to them. In many places the bulges were increased and made more dangerous by the decay of the mortar and its replacement by the swelling roots of briers and weeds, and in some parts the retaining walls were so far out of perpendicular that they had a clear space behind them, the "retained" earth having exerted its pressure at a lower level. The walls were strengthened by excavating pits and trenches wherever



Stirling Old Bridge, before commencement of repair.

necessary beneath the paving of the bridge and its approaches, and building an internal unseen additional thickness of walling to withstand the pressure of the earth. The outer faces of the masonry were scrupulously preserved by raking out the decayed mortar, the dirt and the matted roots, and then tamping in sound new mortar composed of Portland cement and sand in the proportion of one of cement to three of sand. The cement mortar was forced well home into the crevices of the work to a distance of 21 in. in some cases, and, where cavities extended beyond the reach of efficient treatment by hand tamping tools, the interior was either strengthened by additional material as just described, or consolidated with machine grouting. As far as possible, hand grouting into cavities purposely raked clean was resorted to, and different tools were prepared to deal with the different width of the irregular joints. If the space between stone and stone proved too narrow for the effective employment of the normal mixture of cement and sand, a richer mortar was used to ensure complete penetration of each cavity and definite adhesion of the jointing material to its surroundings. The work was constantly examined and joints were cut out from time to time to demonstrate the sound character of the tamped material. Under these conditions, the wall can veritably be made monolithic as far as the good hand-grouting may be made to penetrate, and the standard of execution demanded is such that the stone will crack before the joint will part. The cement was forced back 2 to 2½ in. from the face of the wall and a pointing of Arden lime and washed pebbly sand added to maintain the appearance of the old surface. To prevent the new pointing looking too crude it was sprayed with clean water as it set in order to bring the grains of sand to the surface and reproduce the mellow effect of years of exposure without in the least affecting the strength of the joint. Repairs to the under-water portions of the sterlings were executed in a manner somewhat reminiscent of the experiment put in hand



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Stirling Old Bridge: Part of preliminary survey carried out by H.M. Office of Works (Historic Buildings Branch), before repairing the structure.

by John Smeaton at London Bridge, except that more care was taken in posing the material on the bottom of the river. Blocks of whinstone from six to nine hundredweights apiece were carried down in a sand barge, which was guided into position with ropes, so that the stones could be placed where they were most needed. A mound of heavy stones was formed from the river bed around the outwater of the middle pier, where floods had carried away part of the sterling, and as soon as the pile of stones rose a foot above low water level the work was grouted with neat cement between tides. On this foundation, the damaged masonry of the sterling itself was rebuilt with large roughly dressed blocks of whinstone, the lower courses being grouted in neat cement, and the interior with cement and sand in the proportion of one to two. Both before and after the execution of these repairs, known positions of former fractures were kept under periodical examination, and at important positions, such as the junction of the bridge proper with the approach roads, the masonry was furnished with permanent brass tell-tales by means of which any further movements could be detected.

Some difficulty was experienced in treating the old arches to the processes of consolidation by raking out and grouting the joints. As the arches had settled and become distorted in the process of building and by settlements subsequent to that date, some of the joints at the intrados were squeezed together almost "hard to hard," as masons call it. On the extrados the same joints were open and gaping, and the puzzle was to force in cement through the narrow to the wide open part of the joint, as well as to clean it out in the first place. It was vital that the arch ring should be sound, and special fine steel tools were forged to deal with the difficulty, every joint being packed full of cement and pointed with a substantial edging of lime mortar penetrating 2 or 2½ in. into the work. A few stones which were found to have been burst by the arch pressure through their having been originally "face-bedded" with their laminations parallel to the soffit of the arch. A very few had to be replaced with new stones, but in the great majority of cases the packing of all joints and cavities with cement proved sufficient. One work which proved necessary as a preliminary to adequate internal treatment was the removal of the unsightly and useless patchings of superficially applied Portland cement which had been smeared across the joints and some of the stones in former attempts at repair. Ever since the introduction of modern, hard-setting cements the repairer in a hurry has been tempted to resort to this miserably inartistic and inefficient misuse of good material. Such superficial smearings only suffice to entrap water and direct it into the interior of the work, for they are not in the least degree watertight, and considered as repairs directed to the resistance of structural pressures they are altogether delusive. With the devices now available for working in the dry below water-level, either in the shelter of a coffer-dam, or by means of excavations carried on with the aid of compressed air, the repair of very large bridges has become a matter of discretion. If it is thought proper to retain such a structure as Waterloo Bridge, there is no insuperable structural difficulty in the way. The ideal carried into practice at Stirling Old Bridge would govern the principles of the work, and the maintenance of the present appearance and the genuine old material would be a paramount consideration. The exact measures adopted at Stirling would also apply in part, though they would need to be augmented by the provision of suitable temporary falseworks and centres, and by a frame of reinforcement to be introduced between the crowns of the arches and the roadway to make good the loss of continuity in the structure through its partial dislocation. Tensile reinforcement becomes necessary in such cases when the additional strength obtainable by means of cement grouting cannot be considered sufficient to meet the stresses in the building as a whole, although grouting may still suffice to mend a great deal of the masonry in detail.

A RE-HOUSING SUGGESTION

By HAROLD FALKNER

MANY changes have occurred in the roads that lead out of London, but not the least distressing is the change that has come over them in the last ten years. To people who drive out constantly it may not be very noticeable, but to anyone who has that experience after a lapse of a few years it is very apparent. Before the war the suburbs ended at Kingston—Hounslow and there were gaps in between, now those gaps are filled. Districts such as Bookham were then rural, now they are devastated by the increase of small bad buildings, and this in spite of the restrictive influence of high building costs.

It is not suggested that restraint should be placed on those who really prefer living in what may be termed the outer suburban fringes, but the general aspect of some of these new colonies seems to suggest that their inhabitants are not stimulated by desire for a country life but by the dire necessity imposed by the absence of an alternative.

If this development is taking place at present prices, what would be the rate if building prices were brought down to the same relative rates that the motor industry now bears to its pre-war rates? In a few years, nothing that in any way represents a countryside would exist—at any rate within forty miles of London.

I propose, therefore, in this article, to consider what seems to be the only serious alternative. There are two ways only of expansion: one, the above-mentioned, outwards; the other, upwards (the sanitary authorities would not let us, I fear, build downwards). The objections to upward building are: slightly greater initial cost, and an alleged higher cost of lift service over train service. Others are the prejudice of the British working people (particularly of the artisan class) to any alteration in the planning or general appearance of their dwellings, or their habits. The advantages of the upward schemes are:—

(1) An enormous increase of the uncovered areas of ground. The extra land would provide recreation grounds, playing fields, public gardens (even golf courses, if done on a sufficiently large scale) beyond the most liberal allowance in any modern garden city lay-out.

(2) A very much healthier atmosphere in all the dwellings, particularly the upper stories.

(3) An economy in the lighting and heating, and to some extent in sanitary services.

(4) Considerable improvement in the general sanitary conditions (think of all the unwholesome little back yards in Battersea, the difficulty of inspecting them, and in making any amelioration if they could be inspected).

(5) An absolute control of the smoke nuisance. The saving this alone would effect in the adjoining areas would more than pay for the added expense (on rates or taxes).

The objection to smoke control in industrial premises is that while dwelling-houses are allowed to do as they like, it is useless to control industrial smoke.

I have taken an area in Battersea as a typical example, not because it is the most overcrowded but because it is about the average of many of the less fortunate boroughs, and because it is definitely bounded by railways and roads. The area is approximately 33 acres, the present number of houses 846 (all particulars are taken from Ordnance survey). There are 25 houses to the acre, two families inhabit nearly every house (and take lodgers), so the number of inhabitants is probably 250 to the acre.

Plan No. 1 (see page 76) shows graphically the proportion of houses to open spaces.

Plan No. 2 shows the same area developed in 14 blocks 22 stories high, six tenements per floor, giving a total accommodation for the area at five persons per tenement—9,240 as against 8,460 in the old—at half the number of inhabitants per tenement, and one-third the number per bedroom; besides which, it provides the very large business blocks, A and B, the rents of which would practically outset the interest on the cost of rebuilding the whole area.

Acts of Parliament would, of course, be required for the acquisition of the areas, and the County Council, who would become the owners and developers, would of course have to revise, or totally exempt the builders from, their by-laws.

The area now occupied by schools and playing fields is proportionately extended. It also provides one 125-ft. trunk road as against the present road averaging 60 ft.

The height of the buildings, if the lowest story were used for caretakers, light and heat distributing, club-rooms, private and public stores, would be 250 ft. The top floor would be used for washhouses and laundries and (possibly) crèches, the roof being devoted to drying grounds and recreation. In every case all rooms would receive more light and air than the ground floors of houses as now existing, and the proportion would, of course, be enormously increased as the stories rise.

As to the question of cost, I understand that this class of building can be put up for something like 2s. 6d. per ft. cube as against the L.C.C. price for housing schemes of 1s. 8d.

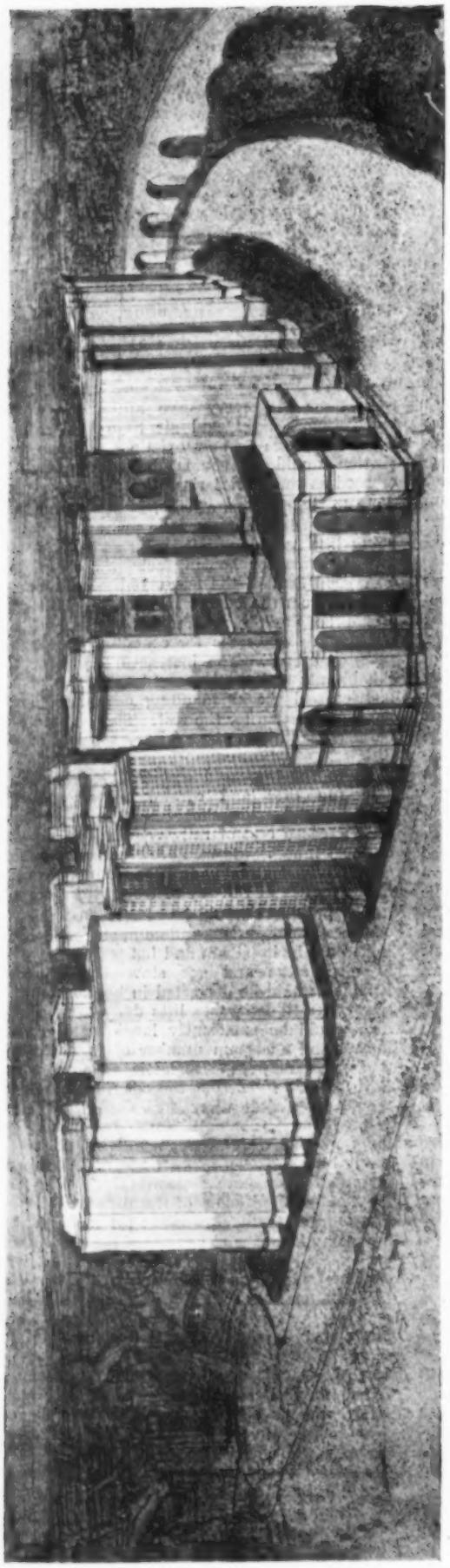
A good deal of the extra 10d. would be recovered from the business blocks, and the cost would be slightly reduced by the use of the old materials (bricks for concrete, doors, and possibly glass). The increased health of the inhabitants and the improved amenities of the district and the surrounding districts, should be compensation for the rest. There would also be some saving on the sanitary services of the district.

As to the increased cost to the inhabitants (working lifts and caretakers for cleaning public parts), this should not be more than the increased cost of railway journeys imposed on most inhabitants who are rehoused on areas generally considerably further from their work in the matter of railway or tram fares.

The buildings would be of ferro-concrete, of course absolutely non-inflammable; the heating would be by steam and hot water; lighting by electricity; and gas stoves for cooking. Rubbish would be deposited in bins automatically collected by waste lifts daily. Passenger lifts would be sufficiently large for perambulators, and a certain number of free journeys might be allowed. Domestic animals would have to be limited, but the open areas to each tenement would allow for a few. I have treated only a small area, in which the sizes of the recreation grounds must necessarily be small; with larger areas, golf courses and parks are quite a possibility. With this kind of building some of the difficulties of rehousing are easily overcome; for instance, the question of what is to become of the inhabitants while the new houses are being built is, with schemes which cover a wide area, a question of great importance. With tall buildings only a small original area need be demolished, while one block is being built; directly one block is completed, the inhabitants of enough of the original small houses can be accommodated in this to enable most of the other block sites to be cleared, the further demolitions being simply to provide the recreation grounds and open spaces.

Again, the materials—steel, gravel or breeze, and Portland cement—are all of the kind of which an abundant supply is available at a not too inflated price, and for much of the work (concrete) only labourers and foremen are required.

I have dealt with the question of cost from a matter of habit, but the time is coming when housing will be so importunate a subject that Governments may have to make cost (as in the case of unemployment pay) give way to policy.



SAME AREA RE-DEVELOPED.

EXISTING LAY-OUT.

Suggested Re-housing Scheme for part of Battersea.

BY MR. HAROLD FALKNER.

PROSPECTS FOR CRAFTSMANSHIP

BY REGINALD HALLWARD.

IN speaking of craftsmanship at a time when the subject in its varying aspects is receiving so much attention, I am concerned, for my purposes here, not with the craft trades, the work of the mason, bricklayer, or joiner, important as these are, but rather with the more highly developed artistry of the individual craftsman. All true craftsmanship implies artistry, and it is only when this is added that craftsmanship attains its goal. The over-emphasis on craftsmanship, a reaction from the industrial revolution, still leaves the central issue untouched, and it is only when thought and feeling have brought it through to the deeper craftsmanship of art that craftsmanship can be said to be enough. To deepen and extend the poetry of art, to attach it more intimately to the depths of human thought and feeling, is to recover its august place in the destinies of human life.

The chief concern is how to attach such convictions to building and the allied arts, through which a closer union may come about. For this can happen only when the same aim animates both, joined by a right outlook on life, which brings them together. For, as the arts rest on truth, so the true way of life is the only way for art. At a time when the principal demand for architecture is made through commerce, industrial conditions and standards governing largely what is demanded, it is an heroic task for the architect to decide on what he may, or may not do—unless he falls back on the sophistry that someone else will do it if he refrains, and makes surrender of his real prerogatives—on this issue, and how it is decided does the future largely depend.

This is true for both architecture and applied artistry, and the way of life for them both. Though the conditions of their work are different their relationships are no less complimentary to each other, needing mutual consideration of what is to be desired, and how executed. If on either hand there is the desire to impose their will, or adopt less than this mutual attitude, there is loss for both. The extension of architecture into this enlarged field of expression can only be developed by the free service of other minds and the additional artistry which this bestows. For architecture, as we understand it to-day—like patriotism—is not enough. All great architecture has fortified itself with the genius of other men. The single mind cannot do this; has not ever done it. In Eastern architecture—Greek, as at the Parthenon and elsewhere; Mediæval, at Amiens—wherever the best is seen, the artistry contributed in this way collectively floods the building; architecture finds new possibilities through it, and the artistry of the craftsmen finds new ones through architecture.

A poverty of architecture existing through the absence of imaginative craftsmanship, it may be retaliated, is hardly to be found. There is some truth in this, and there is also the fact of its being largely due to the difficulty of its survival. It needs something of the heroic, lonely sort of courage, for the artistry of the craftsman not to—at any rate partially—industrialise itself. Through this there has grown that kind of pseudo-artistry which lies in close adherence to the architect's "office drawing." And even where the pose of artist craftsman is perhaps rather arrogantly assumed, we see the counting house or office taking precedence of the art—and the first-hand intimacy no longer attaching to it. It is said we cannot promote art, and yet there is one sense in which this is quite untrue, and the way to it is to distinguish the real from the half real, and the mere hireling from the artist. The way to get it is to want it enough, and the architect does not always want it. We may do without it, but in so doing architecture droops; its music is indeed frozen, lacking the southern zephyrs of romance and treatment in its sculptured and other details.

Though welcoming such steps as have recently been taken, I do not think the R.I.B.A. has, as a body, enough familiarity yet with really personal craftsmanship to give much furtherance to it. We must not only respect, but understand its nature, and this requires more than the admission implied in the movement that there is neglect, though it should prove a step on the way to better things. There has to be a change of outlook on both sides. The prospects for the craftsman depend on an accession of thought and feeling to vitalise form, on giving a nobler interpretation through his materials, based on vision as well as craftsmanship, and on the side of the architect, based on similar feelings, a closer co-operation and appreciation of what the artist has to give. Commerce has made it so relatively easy that I recognise the extra trouble it is to the architect for the artist in him to prevail over the employer.

Above all other methods to promote the artistry of craftsmanship by organisations, societies and movements aiming to further it, the defence of the arts rests primarily on the artist himself. We may look too much outside ourselves for help and entangle ourselves with such machinery. Institutions have as often proved a hindrance as an advantage to the artist, and their influence cannot be shown to have always promoted the best. There is no one will defend architecture if the architect does not; there is no one will defend art if the artist does not. It is this higher self-esteem which can alone now avail us, to believe that it all comes back to the individual. As the explorer, Dr. Nansen, has said: "Let me tell you one secret of such so-called successes as there may have been in my life. . . . It was to burn my boats, and demolish the bridges behind me. Then one loses no time in looking behind when one should have quite enough to do in looking ahead. . . . You have to do or die," and he continues: "It is the explorers with the true spirit of adventure we now need if humanity shall really overcome the present difficulties, and find the right course of that dangerous sea ahead of us." Never more so than to-day have the words of the great poet rung true: "Where before thee no man has trod, make for thyself a path."

In conversation with one of the Canons outside the western doors of the Cathedral of Nantes, on my noticing some defacement to the carved stonework, destroyed at the time of the Revolution, "Ah!" he said, "but if the Church cannot protect itself?" Pondering on the significance of these words, my thoughts were directed to the arts and the danger of the encroachments on all sides to capture them for industrialism, to challenge their prerogatives and replace them with economic and industrial servitude, and the words of the old Canon came back to me. I had so often listened to the doctors, of which we have so many both within and outside the arts, advising the artist to adapt himself to the times, and to learn to market his wares better, and come out of his studio more. As though the craftsman was surrounded with opportunities which he neglected. And as refrain to all this we are told that we are old-fashioned. On the other side there may be some exaggeration of a general truth in what was said by Sir Joshua Reynolds. "An artist," says Reynolds in his letter to Barry, "should bring his mind to bear on painting, from the moment he rises till he goes to bed." This concentration can only grow out of a sense that life is somehow guided, and that the response will come to such conviction because if offers something which appeals to the best in all of us. It is to strengthen production in this way rather than dependence on institutions, the publicity agent and the salesman, that will do most towards encouraging art. The words of the old Canon implied that where there is something great enough it is its own best defence and will draw all others to it.

Taste can be no substitute for inspiration, for its timid conformities leave us cold, and there is nothing into which the spirit of humanity can enter, thought and feeling so little penetrating it; a craftsmanship without a soul. Taste is, indeed, no help, when you are opposed to this greater reality. A recently dedicated chapel in a new Cathedral, one of so many instances, leaves this depressing "office" sense on our minds, so impeccable, but with its fatal intimation, whether stated or not, "designed by the architect." So a sort of flat rate for the arts has been built up, under which in what should be their noblest application they sink to this depressing level.

A great responsibility rests upon the artist who should direct his own labour instead of merely taking the colour of his own time and entangling himself too much in its machinery. Above all else, what really favours his art is his own strong convictions. I admire the solitary courage; the belief that can alone sustain the arts; the honour that compels the artist, against all obstruction and upheld by the inward necessities of his calling, to seek freedom for his expression at all costs. It is this best, of which the good is often the enemy, that we need so much to-day: the great example, the fidelity of fixed purpose, though it stand alone. For when all is said about encouraging the arts, about methods and craftsmanship, there is still the unaccounted for, which counts most of all, and of which we only know for ourselves. It is here, within this stronghold, that the arts have to re-feel and re-think themselves, to interpret life, and its deepest conceptions to-day. And for the young artist emerging from the schools into the great adventure that this foretells, his greatest ally will be found in valorous determination to be one of the ten just men on whom the future of the world depends.

THE COLLEGE OF ESTATE MANAGEMENT.

Mr. J. Leonard Crouch, barrister-at-law, delivered recently a special lecture at the College, dealing with "The Recent Developments in the Law and Practice of Surveys for Dilapidations." In the course of his remarks, the lecturer said that since the war statutory provisions had been enacted affecting the liability of landlords to repair certain classes of property. First in order of time came the Rent Restriction Acts. Under these a landlord, in certain circumstances, could not recover rent while repairs were required. The Housing Act of 1925, Section 1, provided that, despite any stipulation to the contrary, houses let at £40 a year in London and £26 elsewhere—the latter figure being an extension—were repairable by the landlord. The only test was rent. Section 2 provided that any houses suitable for occupation by persons of the working classes were also so repairable. No rental limit was laid down and the only test was suitability for the purpose named. On failure of the landlord to do the repairs, the local authorities could do them. The cost became a mortgage on the premises. The Law of Property Act, 1925, by Section 147, enacted a new condition. If the landlord served an unreasonable notice to do decorative repairs, the lessee could apply for relief. It appears that he could immediately commence proceedings. If this was so, it would appear advisable to write a letter before action, otherwise he might perhaps not get his costs, as the relief sought was discretionary. No question of damages arose, The section was apparently designed to meet abuses of the same description which section 14 of the Conveyancing Act of 1881 effectively encountered.

The foregoing acts followed the lead given by the many agricultural holdings Acts, and assisted the tenants who, from the circumstances of their cases, were considered by Parliament as not always capable of looking effectively after their own interests. Many decisions of the courts were reviewed. They mostly decided questions of mixed law and fact, and care would have to be taken to see that the facts of such precedents applied to other sets of facts, otherwise it might be found that the Courts distinguished the cases and did not consider themselves bound by their previous decision. When deciding what damages would be obtained for breaches of express or implied covenants, judges who sat without juries looked through the eyes of juries. Surveyors should do the same when advising clients. If both parties to a dispute endeavoured to do so, agreement would usually eventuate and the expense involved in litigation would be avoided.

PARTY WALLS: PRACTICE AND DECISIONS

By J. DOUGLAS SCOTT, A.R.I.B.A.

CHAPTER I.

INTRODUCTION AND HISTORY.

AFTER the time when the early rude structures were little more than a protection from the elements and wild animals, and when men were drawn together forming communities and building villages and towns, the history of party walls reflects the progress of building through the ages down to the present time when the needs of the modern city demand the proper separation of buildings with adequate strength and security appropriate to the nature and size of the structure, and regard for the rights of the neighbouring owners of the land and the buildings thereon.

The earliest regulations relating to party walls that the author has discovered occur in an order made by the Court and Aldermen of London in 1192 requiring "all houses to be erected in London or within the liberties thereof to be built of stone with party walls of the same and covered either with slates or tiles," but this order not being sufficiently observed, it was further provided "to appease contentions that might arise among neighbours upon enclosure between land and land that twelve Aldermen of the City should be chosen in full husting and these sworn to attend the Mayor in making the proposed regulations." The dimensions of the walls were to be regulated by these magistrates and were to be at least 3 ft. in thickness and 16 ft. in height. There were also regulations for heightening the party walls by agreement between the owners or otherwise.

The earliest reference to party walls in any Act of Parliament occurs in the one passed after the great fire of London, entitled "An Act for rebuilding the City of London" (1667), wherein, amongst other provisions, regulations were laid down for the separation of buildings by party walls. The buildings were divided into four classes each with their own schedules of thicknesses of walls expressed in terms of bricks. It is interesting to note that in this Act provisions were made for settling questions of light and wages. This Act only applied to the City of London and remained in force until 1772.

An Act "for better preventing mishaps that may happen by fire," and requiring the provision of party walls to all houses within a certain area, outside the City, in London and Westminster, was passed in 1707. In 1725 the law was amended and extended to the parishes of St. Pancras, St. Marylebone, Paddington and Chelsea, and by a further Act in 1747 the thickness of party walls was increased. In 1764 it was enacted that party walls should have parapets carried up 18 in. above the roofs. A further building Act was passed in 1774 whereby buildings were divided into several classes each with their own rules, and remained in force until repealed by the Metropolitan Building Act of 1844, which was repealed by the Metropolitan Building Act of 1855, which in turn was repealed by the London Building Act of 1894.

Several amending Acts have since been passed, some as the result of legal decisions and interpretations on the 1894 Act, and some due to the advance of the science of building, but the 1894 Act remains the principal Act regulating building within the Administrative County of London, which extends over an area of 117 square miles, and contains the provisions defining the procedure for dealing with party structures. The practice in dealing with party structures in London was built up on the Metropolitan Building Act of 1855, and being found to work successfully the provisions of this Act were practically re-enacted in the Act of 1894. The procedure thereunder might well be taken as a basis for dealing with similar problems outside the area governed by this Act, indeed, architects and surveyors would, I think, welcome this procedure being made statutory for party structures throughout the country.

It may be mentioned, in passing, that the Royal Institute of British Architects in December, 1901, passed a resolution requesting the then Local Government Board to promote a Bill in Parliament enacting those provisions of the London Building Act, 1894, dealing with party walls, to apply to the United Kingdom, but unfortunately with no result.

The rights and liabilities of building and adjoining owners in respect of party structures within the Administrative County of London are regulated by Part VIII of the London Building Act, 1894, but other parts of this Act define the terms used, the methods of building and rules for construction, and deal with dangerous structures, penalties, etc. The rights of building and adjoining owners are clearly defined under this Act, and it was held under the preceding Metropolitan Building Act, 1855, in the case of the Standard Bank of British South Africa *v.* Stokes in 1879, that these rights are in substitution of those which existed at Common Law, and are not merely an addition thereto. It would appear that one of the main objects in view in framing Part VIII of the Act, was to enable owners and users of party walls to conduct negotiations and settle disputes without the intervention of lawyers, and to place all such business in the hands of surveyors.

As an architect owes a general duty as a professional man to know and act in accordance with the law so far as it affects his profession, if he designs or constructs without reference to the rights of adjoining owners he may render himself liable for negligence. In the following pages the practice relating to party structures will be considered under two headings, one dealing with that governed by the London Building Act, 1894, and the other that governed by Common Law.

CHAPTER II.

DEFINITIONS AND DECISIONS UNDER THE LONDON BUILDING ACT, 1894.

Speaking generally, under the London Building Act, 1894, the term "party wall" only takes account of user and not of primary ownership; every wall, therefore, which separates two buildings is a party wall under the Act, no matter who built it or how it is situated in reference to the boundary of the property. Whatever rights may exist at law as to the ownership of the wall, or however clear it may be that one of the parties is the owner of all of it, it is a party wall if jointly used by both parties as a separation between their respective buildings. Even if one party can prove that the wall stands wholly on his own land, he is not entitled to interfere with it without the sanction of his neighbour who may only have established a right of user by having built against or up to the wall without permission. The term "party structure" includes not only walls but partitions and floors that are used as a means of separation, and the procedure laid down under the 1894 Act applies to everything of the sort in which joint user can be established.

The definition of a party wall under the Act, section 5 (16) would appear to be limited by section 58 to such part of its length as it is so used, but as the later definition is found under Part VI (Construction of Buildings) it must be assumed that it is intended to apply only to this part of the Act regulating the construction of a party wall. In the action Williams *v.* Bull (1890), under the preceding Act, it was held that a wall occupied for part only of its height by buildings on both sides of it, and above that height by a building on one side only, is a party wall for the whole of its height. In the later case of London, Gloucestershire and North Hants Dairy Co. *v.* Morley and Lanceley (1911), it was held that it was possible to have a wall that was as to part of its height a party wall and as to part of its height not.

These decisions appear contradictory, but are not really so. In the first case, the wall was built as a party wall, as defined by the Act, and for the purpose of determining the rights and liabilities thereunder, was held to be a party wall for the whole of its height, although the upper part did not separate two buildings. The owner of the lower building could have exercised his rights by using this upper part if he desired to raise his building upon complying with the provisions of the Act. The owner of the higher building, although the party wall became the external flank wall of his building, above the adjoining lower building, could not do any work thereto without complying equally with the provisions of the Act. In the second case the wall was not built as a party wall, but by user had become one to the extent so used, and above that height remained an external wall, and the owner of the lower building built against it had no rights in the wall beyond those which he had acquired by user.

The decision in the case of Drury *v.* Army and Navy Auxiliary Co., Ltd. (1896), under section 75, comes under a somewhat different category. In this case, a building of the warehouse class had one portion five stories in height, divided from the other portion one story in height, but communicating by an opening on the lower story fitted with iron doors. Here the question was whether the wall dividing the two portions was a party wall for its entire height or whether the upper portion of the wall above the one-story building was an external wall in which window openings could be constructed. The Divisional Court upheld the Magistrate's decision that "party wall" in section 75 only meant that a wall was a party wall as far as it was used as a separation between two buildings, but it was not a party wall where it ceased to divide the two buildings.

The provisions relating to the cubical extent of buildings, section 75, consent to larger dimensions of buildings, section 76, and rules as to uniting buildings, section 77 of the 1894 Act, have been repealed by the London County Council (General Powers) Act, 1908, where under Part III fresh regulations dealing with these matters are enacted and the term "division walls" substituted for "party walls" used in the 1894 Act, whilst retaining the provisions of that Act as regards construction.

The legal decisions regarding the terms of party wall notices appear to be contrary to the general practice of architects, but, notwithstanding these decisions, I am of opinion that the safest course is to quote the appropriate clauses of section 88 and to attach a plan and section of the wall to the notice.

In this connection the Court of Appeal in the case of Hobbs, Hart & Co. *v.* Grover (1898) held that a party wall notice ought to be so clear and intelligible that the adjoining owner may be able to see whether he ought to serve a counter notice; a notice that was practically a verbatim copy of section 88 was insufficient as wanting in details of the works actually proposed. Again, in the case of Spiers & Son, Ltd. *v.* Troup (1915) it was decided, amongst other points, that a party wall notice stating that the building owner proposed "to pull down and rebuild such party wall, if on survey it be found so far defective or out of repair as to make such operation desirable, and to perform all other necessary works incidental thereto" was insufficient as being vague and hypothetical.

No party wall notice is required to be given to an adjoining owner by a person pulling down his house, unless it forms part of the party structure; a bressummer let into a party structure does not form part of it. This decision in the case of Major *v.* Park Lane Co. (1866) was under the corresponding section of the 1855 Act. No party wall notice is necessary for taking down and rebuilding a party wall condemned as a dangerous structure, but, as a notice provides the means for setting in operation the provisions of the Act regulating the rights and liabilities of the respective owners, it will usually be found better to serve such a notice, which will enable the proceedings which follow to be

regularised and defined and keep the matter in the hands of surveyors.

In the case of Spiers & Son, Ltd. *v.* Troup (1915), previously referred to, the three surveyors were duly appointed, but delay occurred in settling the award and the wall was condemned as a dangerous structure before the award was made. The building owners were suing the adjoining owner for his share of the expense of taking down and rebuilding the party wall, and it was held that both the building and adjoining owners were liable for the expenses of pulling down, but inasmuch as the building owners had not complied with the provisions of Part III of the Act, their claim for contribution towards rebuilding failed.

Unless the work, to which a party wall notice relates, is begun within six months after the date of its service upon the adjoining owner, the notice becomes invalid and a further notice must be served; but the Court of Appeal, in the case of Leadbitter *v.* Marylebone Borough Council (1904), held that this limitation does not apply when a difference has arisen and the matters in dispute have been referred to the surveyors, who do not make their award within six months after the service of the notice.

The right of making good a party structure that is defective and out of repair was held by the decision of the House of Lords, in the case of Barry *v.* Minturn (1913), to be confined to making good the party structure so that it becomes effective for the purpose for which it is actually used or intended to be used. This case originated in an appeal from the award of the surveyors, where the building owner, in extending her building, had made use of the party fence wall dividing the gardens as one of the walls of her building and proposed to remedy dampness found to exist therein by making good from the adjoining owner's side; but this she was not allowed to do, as it was held that the work could be effectively performed from her own side. It was decided that dampness in a wall is a defect within the meaning of the Act only when it renders the wall less effective for the purpose for which it is used or is intended to be used: it is not a defect in a wall dividing two gardens. It was also decided that in determining the proper method of making good a defect the three surveyors are to have regard to the convenience of the adjoining owner.

The obligation to make good all damage occasioned requires the restoration of all things to the condition in which they were previous to the commencement of the work, not only as regards damage to the structure itself but also as regards damage to the adjoining rights of light (Crofts *v.* Haldane, 1867). Section 101 of the 1894 Act enacts the law as laid down by this decision.

The Court of Appeal decided that the surveyors appointed under section 91 to settle the difference between the building and adjoining owners arising out of the proposed raising of a party wall have no jurisdiction to award compensation to the adjoining owner for loss of trade by reason of the execution of the work (Adams *v.* Marylebone Borough Council, 1907). There appears to be no decided case under section 93 (3), where the building owner is liable to compensate the adjoining owner and occupier for any inconvenience, loss or damage that may result from underpinning the adjoining owner's building, and under this section it is assumed that loss of trade may be taken into account.

Reinstatement after fire, when more than half the area of a party wall, not conforming to the Act, is destroyed or so damaged that more than half the area has to be taken down, often raises difficulties. In rebuilding such a party wall the provisions of the Act have to be observed as for a new building. In the case of old party walls that do not comply with the Schedules as to materials or thickness, the question will arise as to the liability for extra cost of the work involved in rebuilding in accordance with the Act, and how any extra thickness is to be disposed on the lands of the two owners. Under their usual fire policies the insurance companies only undertake to make good or reinstate as formerly, but if an architect had been consulted as to the insurance he would no doubt have advised his client on this contingent liability and safeguarded his interests by seeing that a clause was inserted in the policy for reinstating in accordance with the Building Acts in force. The question of disposing of any extra thickness required by a new party wall on the lands of the two adjoining owners is a matter for adjustment by the surveyors concerned.

In the case of Crow *v.* Redhouse (1895), where premises were partly destroyed by fire and were taken down for more than one half the cubical extent, but the party wall, which did not conform to the Act, was not taken down or destroyed to the extent of one half the superficial area and was rebuilt as formerly existing, the district surveyor sought to have this party wall made to conform to the Act in reinstating the premises. The magistrate decided against the district surveyor under section 208; the Divisional Court, on appeal, upheld this decision, which was also upheld by the Appeal Court.

In the case of White *v.* Hepworth (1895), where one owner had pulled down his house which was separated from the other by a wooden partition and it was alleged that rain had in consequence entered and caused damage to the adjoining owner's premises and property, it was held that the mere fact that part of the outer wall was now exposed to the weather instead of being the defendant's inner wall could not give the plaintiff any cause of action. This action was for damages for loss of lateral support, which failed; but the above-quoted part of the judgment seems contrary to section 90 (2).

An injunction will be granted to restrain the building owner proceeding with work to a party wall until the surveyors have made their award.

The Court of Appeal, in the case of Leadbitter *v.* Marylebone Borough Council (1904), held that the surveyors had acted *ultra vires* in providing in their award, that the adjoining owners should be entitled to raise the party wall that had been rebuilt, at any time they might think fit, without notice to the free holders of the lessee, who were the original building owners. Where the original owner had assigned his interest in the premises to another before the adjoining owner made greater use of the party wall that the original owner had raised, it was held that the adjoining owner must pay his contribution for greater user to the assignee, and not to the original building owner, who had parted with his interest in the premises (Mason *v.* Fulham Borough Council, 1910). The lessors of the sub-lease were the persons entitled to be recouped for greater user of a party wall by an adjoining owner (*re* Stone and Hastie, 1903). An adjoining owner has no right to use a neighbour's external wall as a party wall and can be restrained by injunction (Fred Betts, Ltd. *v.* Pickford's, Ltd., 1906).

Certain works had been done at different periods to a wall, held to be a party wall, and further work was contemplated and an award made concerning this work, when the premises were destroyed by fire, disclosing conditions not previously known, whereupon the adjoining owners appealed from the award. The County Court judge found that the wall was originally an external wall and had become by user a party wall up to the height previously enjoyed, but above this height it was still an external wall and the building owners were not entitled to do the work proposed. On appeal to the Divisional Court it was held that the building owners were not entitled to acquire a greater interest in the wall than they had already acquired by user (London, Gloucestershire and Northants Dairy Co. *v.* Morley and Lanceley, 1911).

Where the work to a party wall had not been carried out in accordance with the terms of the award, an application was made for the attachment of the offending party (A.B.C. *v.* Shepperd, 1896).

In the case of small houses erected in blocks of not more than eight houses, the L.C.C. will, on application, sanction the omission of party walls above the roofs; they must, however, be carried up to the underside of the slating or tiling. Most of the local authorities will also consent to this omission, but usually confine the number to six houses.

BIRMINGHAM ARCHITECTURAL ASSOCIATION

THE fifth general meeting of the session was held in the Association's rooms in New-street on the 7th inst. (the President, Mr. Holland W. Hobbiss, A.R.I.B.A., in the chair), when Mr. H. P. G. Maule, D.S.O., M.C., F.R.I.B.A., gave "Some Notes on Buildings for Research Work," plentifully illustrated by plans and photographs of buildings of such a nature, already carried out. The lecturer began by saying that although the call for domestic buildings was still insistent, a great problem was added in the demand for buildings for the work of research. The future was bound up in research work, and our world-wide Empire looked to and depended upon our efforts and accomplishments. Modern research in all its branches received a great impetus during the late war and had continued to make great strides since.

New problems arose and fresh theories came about almost daily, so that the architect must needs be very much alive to cope with the altering conditions and demands, which might even take place while his building was in course of erection; but some general essentials remained the same throughout, *i.e.*, good natural light in the laboratories, with as few and as narrow piers as possible; great care for sanitation, with all fittings, sinks and carrying channels open, running inside the building until finally discharging down an earthenware pipe; the elimination, as far as possible, of dust and damp—the greatest enemies of research work; and ample ventilation and heating.

The lecturer pointed out that the work of research was chiefly divided into three classes—Pathological, Agricultural, Trade and Commerce—each requiring totally different buildings. It was shown and explained to what lengths, in special planning and arrangements, efforts against infection of animals and birds had gone to in attempting to minimise this danger. Although modern research was only in its infancy and its demands were so continually changing, the lecturer did not advise buildings of a wholly temporary nature, because in instances in which buildings of such a character had been attempted they had been found unsuitable, especially in the pathological section, where rigidity, stability, dustlessness, quiet, vermin-proofness and the fixing of temperatures were essential to successful experiments.

As a wall or roof material, ferro-concrete was not advised. But buildings should be so designed as to be easily capable of expansion or contraction in units, both laterally and vertically. Stress was laid upon the provision for adequate recreation, both indoors and out, if those so closely engaged on their work and experiments and working together in teams, as it were, were to produce satisfactory results. Generally speaking, the designing of buildings for research work was new to architects (and often even the technical staff were not at all sure of their requirements), but the lecturer urged that architects should make it their business to fit themselves to cope with the demand which must grow by leaps and bounds in the near future, or yet another phase of building would drift into the hands of the "trade specialists."

An interesting discussion followed, and a hearty vote of thanks was accorded to the lecturer.

Preserving Cissbury Ring.

Worthing Council have decided that Cissbury Ring, the prehistoric earthwork, shall remain in its natural grandeur, unmarred by any modern addition. The council unanimously declined a request for permission to place a memorial seat, of approved design, on the Ring.

THE LONDON BUILDING ACTS AND THEIR APPLICATION.—I.

BY H. V. MILNES EMERSON, A.R.I.B.A.

THE oldest building law on record and one still in force is to be found in the Bible in the fifth Book of Moses, called Deuteronomy, chapter xxii, verse 8, which reads as follows:—"When thou buildest a new house, then thou shalt make a battlement for thy roof, that thou bring not blood upon thine house, if any man fall from thence."

Prior to the Great Fire of London, 1666, buildings were erected practically without any restrictions regarding materials used. In 1667 was passed "An Act for rebuilding the City of London," and under that Act the Lord Mayor, Aldermen and Common Council of the City of London were called upon to appoint "one or more discreet and intelligent person or persons in the Art of Building to be the Surveyors or Supervisors to see the said rules and scantlings well and truly observed." The District Surveyors of the present day are the official descendants of the surveyors or supervisors appointed under that Act. This Act also provided for the separation of buildings by party walls, the omission of which in the houses erected previous to this Act had enabled the Great Fire to destroy a full square mile of the City of London. Under the Act 6 Anne, party walls were required to all houses in London and Westminster. This Act was amended the next year, 7 Anne, and this Statute also enacted that in London after June 1, 1709, no door frame or window frame of wood to be fixed in any house or building within the Cities of London, &c., shall be set nearer to the outside face of the wall than 4 in. Previously to this, as was also the case in the country, reveals had only about 2 in.; or the window frame was even flush with the outside face of the wall. The idea of setting the frame back 4 in. or more from the face of the wall was to prevent the passage of fire from one window to another. In 1764 (Geo. III) it was enacted that master builders were to have the building when roofed in surveyed by one or more surveyors, who were required to take oath before the Justice of the Peace that the building had been erected in accordance with the Act. Further Acts were passed in 1764, 1766 and 1772, relating to party walls and streets; in 1774 (Geo. III) providing for the establishment of District Surveyors outside the City of London. The Lord Mayor and Aldermen in the City of London and Justices of Peace in their respective General Quarter Sessions were required to appoint the "Surveyors or Supervisors," who had to take oath to observe and enforce the Act. This Act remained in force until the introduction of the Metropolitan Building Act (1844). Under this Act the Surveyors or Supervisors received the existing title of District Surveyor. The method of appointment remained the same, but he had to be qualified by examination. Under the Metropolitan Act of 1855 the Royal Institute of British Architects was appointed as the examining body. This body still conducts the examinations, but the appointment of District Surveyors is now made by the London County Council, under the London Building Act, 1894. Although the appointments are made by the L.C.C., it has been decided that "District Surveyors are persons having a statutory position and duty cast upon them; they are not mere servants of the London County Council."

In 1894 the London Building Act was passed and came into operation on January 1, 1895, and with additions and amendments at later dates is the London Building Act in force at the present time.

The preamble of the new Act, after reciting the titles of the existing Acts, states, "And whereas the existing provisions of the said Acts are complicated and in some respects doubtful, and are insufficient to secure the construction and maintenance of streets and buildings in a satisfactory manner," and "further provisions should be made and powers conferred in order to secure a proper width and direction of streets' the sound construction of buildings, the diminution of the danger arising from fire, the securing of more light, air, and space around buildings, and generally with respect to the control and regulation of streets and buildings."

The object of the Act of 1894 was to do away with the existing Acts of the previous 50 years, which had become complicated, doubtful and insufficient and to replace them with a new Act with clearness and simplicity of construction, wording and definition. That Act is now over 30 years old, and with the additions and amendments to the original Act, supplemented with sundry Acts dealing with buildings, town planning, &c., it has receded from the supposed sweet simplicity of the London Building Act, 1894.

The following Acts were partly repealed:—

The Metropolis Management Act, 1855.

The Metropolis Management Amendment Act, 1862.

The Metropolis Management and Building Acts Amendment Act, 1878.

The London County Council (General Powers) Act, 1890.

The London County Council (General Powers) Act, 1893.

SECTION 4 of the Act states: "This Act shall, save so far as is otherwise provided, extend to London and no further." The map published in the New Year Number of *The Builder*, on January 14, will show the extent of the districts included in this Act and the names of the District Surveyors.

SECTION 5 (Definitions).—In this Act, unless the context otherwise requires—

(1) The expression "street" means and includes any highway and any road, bridge, lane, mews, footway, square, court, alley, passage, whether a thoroughfare or not; and a part of any such highway, road, bridge, lane, mews, footway, square, court, alley, or passage.

(2) The expression "way" includes any public road-way or footpath not being a street and any private road-way or footpath which it is proposed to convert into a highway or to form, lay out, or adapt as a street.

(3) The expression "roadway" in relation to any street or way means and includes the whole space open for traffic whether carriage traffic and foot traffic or foot traffic only.

(4) The term "centre of the roadway" means—

(*a*) In relation to any street or way of which the centre of the roadway has been ascertained or defined by the Council or the superintending architect previously to or after the commencement of this Act the centre of the roadway as so ascertained or defined;

(*b*) In relation to any street or way of which the centre of the roadway shall not have been ascertained or defined by the Council or the superintending architect where the roadway opposite the site of the building in question shall since the twenty-second day of July, one thousand eight hundred and seventy-eight, have been widened the centre of the roadway as existing immediately before the date of such widening or where it shall not have been so widened the actual centre of the existing roadway.

For the purpose of any enactment in this Act referring to the centre of the roadway the superintending architect may at any time define the line constituting the centre of the roadway in the case of a street formed or laid out after the eighteenth day of August, one thousand eight hundred and ninety, and the line defined shall continue to be deemed the centre for such purpose, notwithstanding that the actual centre of the roadway may have become altered by reason of the roadway having been widened either on one side only or on both sides to an unequal extent.

(5) The expression "the prescribed distance" means 20 ft. from the centre of the roadway where such roadway is used for the purpose of carriage traffic and 10 ft. from the centre of the roadway where such roadway is used for the purposes of foot traffic only.

Note.—The Council may, in certain cases, extend this distance as set forth in Section 13.

(6) The expression "new building" means and includes—

Any building erected after the commencement of this Act; any building which has been taken down for more than one-half of its cubical extent and re-erected or commenced to be re-erected wholly or partially on the same site after the commencement of this Act; any space between walls and building which is roofed or commenced to be roofed after the commencement of this Act.

Note.—No definition of "building" appears in the Act, this having been struck out in Committee of the House of Lords.

The second paragraph of this subsection being merely a definition and not an enacting section, it was held that where a building had been partially burnt and had been taken down for more than half of its cubical extent, but the party wall between it and the adjoining building had been taken down to the extent of less than one-half thereof and the part taken down re-erected, the remaining portion of the party wall need not be made to conform with the provisions of the present Act, because Section 5 (*b*) is merely a definition section, and sufficient of the party wall had not been taken down to bring it within Section 208.

Lord Coleridge, C.J. (James *v.* Wyville), stated: "The question whether a building is a new building or not has been decided over and over again to be a question of fact; it is a question of degree. A building nearly all taken away and rebuilt would be a new building, but the small addition of, say, a door would not make the building a new building. Between these extreme cases there may be thousands of cases, and it must be left to the discretion of each judge to decide for himself what is a new building."

DISCOVERIES AT UR.

AN interesting report upon the excavations at Ur in Irak since their resumption on October 28 by the joint expedition of the British Museum and the Pennsylvanian University Museum has been issued by the authorities of the former institution.

Work has been proceeding upon a lofty mound just outside the wall built by Nebuchadnezzar round the sacred area. In an area some 70 yds. by 50, several blocks of houses belonging to about the period of Abraham, 2100 to 1900 B.C., have been found. Twenty feet down in the mound, with their walls astonishingly well preserved, the fronts of the houses were of burnt brick, only the interior walls being of mud brick over burnt brick. The foundations rise 3 ft. or so above the level of the brick-paved floor.

The houses had been swept bare of nearly all their contents, and even the graves of their occupiers beneath them had generally been plundered, yielding little except clay pots and sometimes the signet seal of the householders. But the ruins were productive in one respect, perhaps the most important being that large numbers of inscribed tablets were found lying along the foot of the brick shelf in the repository, where they had been kept or flung out together as rubbish in some period of destruction. From the few it has been possible to examine it is clear that a most important and interesting series of documents has been secured. Among the art objects found are a small figure of a lion in alabaster, a head of a ram, probably from a ceremonial staff, and a bottle of blue and black moulded glass.

GENERAL NEWS

Professional Announcement.

Mr. Harry Hutt, F.R.I.B.A., has taken Mr. E. Steward Smith, A.R.I.B.A., into partnership. Mr. Steward Smith, who is the younger son of the late Mr. Charles Steward Smith, J.P., F.R.I.B.A., becomes the third generation to be associated with this firm.

Proposed Doncaster to Trent Ship Canal.

The committee appointed to consider the scheme for a Doncaster to Trent ship canal, which was proposed by the Federation of British Industries, at an estimated cost of £11,000,000, met at Doncaster on Friday last, and selected two engineers, of whom one will prepare a scheme. The committee's proposals will be placed before the Royal Commission on Doncaster Coalfield Drainage in March. Important colliery interests are behind the scheme.

St. Mary-le-Bow.

It is understood that extensive repairs are required by the Church of St. Mary-le-Bow, whose spire is one of Wren's finest efforts. The bell-tower, housing the famous "Bow Bells," is in great need of repair, while the big 53-cwt. tenor bell itself is cracked and its bearings are said to be in a precarious condition. The organ, too, is in need of repair and much work is required by way of redecoration to the interior. The sum required for the complete reconditioning of church and bells is £10,000.

Byzantine Carving in Green Porphyry.

The Victoria and Albert Museum has just acquired from the Abbey of Heiligenkreuz, in Austria, a circular relief in the rare green porphyry quarried near Sparta, representing the Virgin in prayer, which is of the highest importance for the history of art. Apart from its great beauty, it is almost the only Byzantine carving in any material that can be dated with complete certainty; round the edge is an inscription in Greek invoking the help of the Mother of God for Nicephorus Botaniates, Emperor at Constantinople from 1078 to 1081 A.D.

The New Lock at Sunbury.

Lord Desborough presided recently at a meeting of the Thames Conservancy Board, when the Works Committee recommended that a programme of work, submitted by the engineer, at an estimated cost of £96,343, should be approved.

In his review of the past year, the Chairman said that the new lock at Sunbury had been practically completed and would be shortly opened to traffic. This lock would be 205.6 ft. long and 25 ft. wide, and would have a depth on the sills of 8 ft. The old lock, which was 154.6 ft. long, 19 ft. 11 in. wide, and 7 ft. 3 in. deep, would be repaired and retained in use, and would greatly facilitate traffic. Six other locks had been under repair.

Tudor Architecture in Old Barking.

Further evidence of the number of Tudor buildings in the old town of Barking is afforded by the alterations which are being effected in the centre of the town to make room for the improvement of the main thoroughfares. The premises at which alterations are now being made were undoubtedly built in the Tudor period. The walls are mostly of oak framing, and in the cellar the brickwork is composed of thin Tudor bricks. Several pointed arched niches in the walls were found and also a four-centred Tudor arch in one of the division walls. Two very plain stone Tudor mantelpieces were found walled up, but they were unfortunately broken to pieces in pulling down. An interesting feature is that some of the plaster ceilings have been found to be formed with reeds instead of the ordinary wood lathing.

The Northern Polytechnic: School of Decoration.

We learn that the authorities of the Northern Polytechnic, Holloway-road, London, N.7, have decided to run special classes in the School of Decoration for students over the age of thirty. The syllabus will be modelled on that issued by the National Painters' and Decorators' Joint Education Committee. The School reopened after the Christmas vacation on Monday, January 10. Mr. Eaton is in charge of the School of Decoration. In September last a special class for the purpose of the study of Interior Decoration, Period Styles, &c., was commenced, and a specialist teacher appointed. The class has been so successful that it has been decided to extend the work. The class is held on Wednesdays, Thursdays, and such other nights as are found necessary.

Stratford Town Planning.

The site plan for the new Stratford Memorial Theatre discloses the fact that the rebuilding is to be combined with a Stratford-on-Avon town-planning scheme of national importance. By agreement between the Corporation of Stratford-upon-Avon, the Great Western Railway, and the Governors of the Shakespeare Memorial Theatre, a block of unsightly buildings now standing between the Bankcroft Gardens and the approach to Clopton Bridge is to be swept away. The area thus secured will provide an extension of the Bankcroft Gardens. It provides also approaches to a new bridge which will span the Avon at this point, diverging from the historical fifteenth-century Clopton Bridge and preserving the latter intact for the delight of future generations. Having in this way settled the future of old Clopton Bridge and secured not only an enlargement of its public gardens but a new bridge to carry the London traffic, the Corporation of Stratford-upon-Avon has been able to cede to the Governors of the Shakespeare Memorial Theatre a portion of the Gardens adjoining the old theatre site.

Thus the new Shakespeare Memorial Theatre will occupy a larger and better site, with a picturesque approach across an old canal basin through the public gardens. Time will be allowed for a thorough study of this picturesque site by architects and for the submission of plans and designs which, it is believed, will ensure the erection of a theatre worthy of Shakespeare. The estimated cost of the new theatre is £100,000. Towards this the Governors have now a sum of £50,000 in hand. Particulars of this competition are given in the next column.

COMPETITION NEWS

Students' Union, Glasgow.

Architects in practice in Glasgow are invited to submit designs for a proposed Students' Union to be erected in University-avenue, Glasgow. Mr. James Kennedy Hunter, F.R.I.B.A., is the assessor. Applications for conditions of competition should be made to Mr. Robert Brough, Hon. Secretary, Student Welfare Scheme, the University, not later than January 26.

University Buildings, Western Australia.

The University of Western Australia is inviting competitive designs for buildings to cost £150,000, including great hall, offices, &c. Premiums of £300, £200 and £100 are offered. Conditions, which will be similar to those of the Federal Council of Australian Institutes, will be obtainable by the end of January from the Agent-General for Western Australia, "Savoy House," 115–116, Strand, London, W.C.2, or the Australian Trade Commission, 44, Whitehall-street, New York City, U.S.A. The competition will close on August 23, 1927.

Shakespeare National Memorial Theatre, Stratford-upon-Avon.

The Governors of this theatre invite architects to submit designs for the Shakespeare National Memorial Theatre, Stratford-upon-Avon. The competition will be open to architects of the British Isles and America. It will be in two sections—a preliminary competition for sketch designs only, from which six designs will be selected by the assessors; each of the selected competitors will be paid £100 premium towards the cost of preparing a further more detailed design, which will form the second half of the competition. The selected architect will be paid in accordance with the schedule of charges sanctioned by the R.I.B.A. Conditions of competition, with site plan, &c., can be obtained from the Secretary, Shakespeare Memorial Theatre, Stratford-upon-Avon, on payment of a deposit of £1 1s. (which will be refunded should the conditions be returned within one month). Preliminary designs must be delivered to Stratford-upon-Avon not later than June 15, 1927. The competition will be judged by Mr. Robert Atkinson, F.R.I.B.A., Director of Education, Architectural Association Schools of Architecture; Mr. E. Guy Dawber, P.R.I.B.A.; and Mr. Cass Gilbert, Past President of the American Institute of Architects.

Manchester Town Hall Extension.

We learn that there are sixty-four entries for this competition. Messrs. Robert Atkinson, Ralph Knott, and Thomas R. Milburn are the assessors.

[There are no changes this week in the Competition Table, which is accordingly withheld.]

New Station at Ramsgate, for the Southern Railway. (*See also p.* 87.)

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Rural Industries Bureau.

SIR,—I shall be glad if I may be enabled to thank you in your columns for the admirable leading article on rural industries in your issue of December 31. I should like further to offer one or two comments thereon.

In the matter of hand-wrought ironwork, nothing can be more pleasing than your uncompromising denunciation of the word "decorative." A horseshoe, rightly made (and the Bureau can amply endorse, through many blacksmiths, the superiority of the hand-made horseshoe over the mass-produced one), is decorative, because it well becomes the horse's hoof; but it is not so described. On the other hand, an "arty" pair of fire-dogs (perhaps with horrid deadly spikes of inconsequent foliage as ornamentation—we have had such submitted to us) is not decorative, though it is so-called. The blacksmith who has lost his tradition is generally apt to think that the making of domestic or architectural ironwork implies a clever torturing of his material. The Bureau puts forward for his temporary benefit the designs to which you refer, not, I am anxious to state, because it conceives that "design" is a mystery which may thus with any ultimate propriety be separated from "doing"—it most emphatically does not—but because it appears necessary to show at first by example the kind of thing that should be done. What promises, however, to be of much greater educative value is the organisation of escorted visits of blacksmiths to museums where fine work is exhibited. They learn more and are more convinced in five minutes by seeing what their forerunners in the craft actually did than by spending hours over dull, formulated blue prints provided for them by people who, they perhaps suspect (and perhaps rightly), have never hammered iron in their lives.

May I add that the Bureau has on its register in many of the counties, already doing good work, quite sufficient blacksmiths to make it felt that there are not as yet sufficient architects and builders giving them orders? At a recent county conference the county architect doubted the ability of the smith to produce work for public authorities at anything like the price of the factory-made article; and it may be that this is at the root of what seems to be a certain hesitancy. The reply given at the conference in question was that the rural smith who makes intelligent use of the modern equipment (such as the much advocated acetylene welding) which the country Co-operative Societies are making available to him, and who has the ever increasing advantage of almost negligible overhead charges in the shape of rent, rates, and general cost of living, actually can compete. His product, if properly costed, will almost certainly be higher in price than the factory-made article; but it will frequently be not so much higher but that its obviously finer quality and beauty will make it appear the cheaper. The Bureau is at all times ready and anxious to put prospective users of hand-wrought ironwork into touch with the nearest reliable smiths who can provide it.

The County Rural Industries Co-operative Societies (or Guilds of Rural Craftsmen), above referred to, are being set up by most of the counties as the latter begin to organise Rural Community Councils with Rural Industries Committees. There are now such societies, already working, forming, or projected in Sussex, Hampshire, Somerset, Gloucestershire, Leicestershire, Nottinghamshire, Cambridgeshire, and Derbyshire, besides the original ones of Oxfordshire and Kent.

I have already written at such length that I dare not go on to comment on the position of the rural saddler further than to say that a recent conference held in Kent may lead us to hope that it is not, after all, inevitable that he should degenerate from the craftsman into the mere salesman. The difficulty, it must be said, is less to suggest new lines than to induce the elderly men of the trade to try them. They had rather die out as saddlers than develop into leather workers of some different order.

In conclusion, it is very true that the Bureau is, as you state, but one organisation of several now at work "on different aspects of what is really one and the same problem, reacting on each other." The trouble is that the national mind is not made up on that problem. Have we really any mandate to work for "joy in industry"—with all that it implies—to encourage small industries against big; in a word, to reverse the whole national economic running of more than a century by ruralising instead of urbanising? Are we not just trying to have our sentimental cake while we are going on commercially eating it? We cannot, nationally, really mean effective business in this matter so long as we allow the prime rural industry of all—agriculture—to remain what it is: a sweating earthen pot among the brazen vessels of up-to-date industrialism. Geniuses as we are for compromise, I think the signs of the times may be pointing us to an ultimately defined and deliberate economic development of the country into garden city units, each with its manufacturing area and its rural belt; as a solution of the problem of economic rural electricity supply alone this may be necessitated.

W. W. BLAIR FISH,
Director.

Consistent Cast-iron Design.

SIR,—The grand staircase balustrade of Howick House, Lesbury, Northumberland, instanced by Mr. G. Reavell in last Friday's issue, scarcely bears upon my precise question as to the composite employment of cast-iron as a substitute in the minor equipments of wrought iron design, as exemplified by Sir John Soane's railings round his tomb to de Loutherbourg at Chiswick. The hand-chased polished brass decoration at Earl Grey's mansion dominated the entire scheme, the simple wrought-iron framing merely serving structural purposes. The little attached roses cast in brass, which induced my query, needed no chasing and might quite well have been made in cast-iron. In the beautiful railings at Chesterfield House, Mayfair, similar roses set between the uprights, within circular rings, like other parts of that masterpiece, are of fine smith's craftsmanship.

MAURICE B. ADAMS.

Ancient Surveying Instruments.

In the course of a lecture read to the Royal Geographical Society on this subject, Colonel Sir Henry Lyons said that a unit of length derived from a part of the human body, such as the forearm or foot, determined the length of the rod or cord with which pieces of land could be measured in early times. It was not surprising that but few of those simple instruments had survived, for they were easily prepared and replaced when worn out or lost, and so were of little value. Not only were the Egyptians of early times competent to measure lands and lay out large buildings, but they had attained a very satisfactory accuracy in levelling. Proof of this was furnished by the Great Pyramid at Giza. The rock pavement on which the Pyramid was built was carefully levelled before the construction of the Pyramid was begun, and levelling recently carried out by the Survey of Egypt showed it was very successfully done. Land surveying was regularly practised at all periods of ancient Egypt.

Long Crendon Manor, near Thame, Bucks.

MR. PHILIP TILDEN, Architect.

GLAZED SCULPTURE.

MR. J. ALAN SLATER, M.A., F.R.I.B.A. (President), occupied the chair at a general meeting of the Architectural Association, held at 35, Bedford-square, W.C.1, on Monday evening.

After the minutes of the preceding meeting had been confirmed, votes of condolence were passed to the relatives of the late H. W. Collins, W. E. Davis, and L. A. Shuffrey. Votes of condolence were also passed to the Art Workers' Guild on the death of Mr. John Leighton (Master), and to the Association of Architects, Surveyors and Technical Assistants on the death of the President, Mr. E. Fiander Etchells.

Mr. F. A. Waterhouse, Mr. L. F. Browne, Miss V. M. de B. Barnewall, and Miss W. M. Blackett were unanimously elected members.

The Honorary Treasurer submitted the accounts for the past year, which showed that the usual allocation to the reduction of the debentures had been increased from £500 to £900.

MR. HAROLD STABLER then gave an address, illustrated with lantern slides, on glazed sculpture, or the application of pottery to architecture. By glazed sculpture he meant the bigger or architectural work, and not the small glazed figures of which great numbers had been produced during the past fifteen or twenty years on the Continent, and to a limited extent in this country.

In briefly reviewing the work of the past, the lecturer said he would make one great omission in leaving out the work of the Della Robbia's and their school, because they would all be familiar with that work, and, moreover, it would need an evening to itself. The history of glazing started over 400 years ago. Frit beads and glazed objects—amulets and so on—had been found in Babylonia dating back to before 2000 B.C. Glazing was known in Egypt at an early date, and it was more than likely that Mesopotamian and Egyptian glazing had a common origin. It was, he believed, thought that glass was first made near the River Belus, in Syria, where a sand particularly suitable for the purpose existed. Having got as far as making glass, it would seem a natural development to apply a modification of the process to glazing bricks. So, as might be expected, it was the great brick-building nations of Western Asia who first applied glaze to architecture.

About 2000 B.C. the Assyrians protected the painted surfaces of bricks or slabs of clay with glaze, which was "slipped" and painted; "slip" was the fine clay used for surfacing glazed objects. This was probably one of the earliest forms of underglaze painting; the glaze was very slight, and used internally. Then followed geometric patterns painted on pots and treated in the same way. The Assyrians used chiefly stone for the buildings, as stone was more easily accessible to them. For the decoration of the buildings they carved great bas-reliefs in a kind of alabaster, illustrating their various triumphs and activities. These reliefs were coloured, like most early architectural decoration, and were the forerunners of Babylonian glazed brickwork.

The Babylonians, not having stone at hand, naturally used clay for most of their building. The Ishtar Gate at Babylon, the work of one of the greatest builders in history—Nebuchadnezzar—was glazed. This gate formed a stupendous and magnificent entrance to the great processional way that led to the Temple of the god Marduk, and the way was worthy of the gate, if one might judge by the size of the stones with which it was paved; these measured over 3 ft. by 3 ft. by 1 ft. thick. Leading to the gate were high and massive defensive walls guarding the approach, 180 yds. long by 22 ft. thick. These walls were decorated with lions and enamelled in bright colours. Some of the lions were white with yellow manes, others were yellow with red manes; the ground on which they were placed was light or dark blue. Black and white lines in flat enamel with rosettes formed two long frescoes 550 ft. long. Altogether there were 120 lions—60 on each side. The lions and other decoration were formed on the individual bricks, which were moulded and then marked before they were fired in order that the bricklayers would have no difficulty in placing them to form the decoration.

The decorations of the Ishtar Gate consisted of bulls and dragons in alternate rows. The walls of the gate were 55 ft. thick. It was interesting to note that the glazes recently discovered at Ur were identical with those on the Ishtar Gate.

The Persians took over the Assyrian types of figures, but used Babylonian technique. Passing over a thousand years, they found glazed ware used in China in the Tang

Coloured and Glazed Faience Work: Durban War Memorial.
Modelled by PHŒBE and HAROLD STABLER, and carried out by HAROLD STABLER.

"St. George"—Glazed Terra-cotta: Part of Memorial at Rugby.
BY HAROLD and PHŒBE STABLER.

Glazed Roundel, Kensington Infirmary Mortuary.
BY PHŒBE STABLER

Dynasty (A.D 618-906). Twenty-five years ago practically nothing was known of the work of this period in China, but the opening up of railways had made it possible for investigators to get access to the districts in which they were to be found. The glazed sculpture figures of China were usually architectural ornaments, such as roof finials, decorated slabs, figures for niches, etc. They were made of a hard clay and glazed in green, yellow, purple, brown and white. Tomb figures were made in great numbers, often roughly finished but very spirited in modelling; they could certainly be classed as works of art.

The lecturer then showed slides of modern work in glazed ware. His feeling in designing in this material, he said, was that the effect should be sharp and crisp, and that very careful attention must be given to pattern and colour. The colour was an added thing with which the artist could play; in its right place, and properly used, colour ought to contribute to the interest and to keep the carrying power and the distant view. The colour should be a mosaic of colour contrast and pattern, rather like glass—clean, sharp, and well-defined. The fewer accidental or "interesting" effects the better. Pottery was a difficult and trying craft at any time, but when the artist got outside the usual routine it bristled with difficulties and pitfalls.

On a piece of work of the scale of the Durban Memorial, which was 21 ft. high and weighed 14 tons, great care and calculation was necessary before starting. The 14 tons of clay had to be erected, hollow, and without armature of strengthening such as sculptors could use in making models; it had projections of 17 in., and had to be kept in position for four months after it had been made. First a model, very accurate to scale, was made, and from this full-size sections were taken off on to three-ply wood by a scale-pointing machine. The whole of the clay was moulded on an enormous easel, sloping to the back at the top and with projections or ledges to support the clay. The whole of the easel was made so that sections could be taken down from the back in order to be able to get at the back of the clay to keep it moist. A further difficulty was that the shrinkage of clay, which amounted to about eleven-sixteenths of an inch per foot, had to be taken into consideration and allowed for; thus, the model as made, or "clay size," was larger than was required to fit the memorial, and shrunk to the proper size after it was modelled. It also had to be protected from damp and wind and frost; if frost reached the clay it would have made the surface too sticky to be worked. After it had been made, the piece was cut into sections averaging in weight about two hundredweights; this was necessary in order to fire it, as the entrance to the kiln would not allow of larger pieces being fired, even if it had been possible to cut and lower larger sections to the ground without damaging them. The glaze was then applied to the pieces, and they were fired. After firing, they were assembled on the floor ready for dispatch to South Africa.

Discussion.

MR. WALTER BAYES said he had been much interested in the question of colour in sculpture, for which he thought there was much scope. Unfortunately, in Victorian times, owing to the fact that the Greek sculpture then discovered showed no traces of colour, it was considered that sculpture should not be coloured, and it was a long time before this generally accepted opinion was altered. When these ideas were formed, the charming early temples, with fired-ware tiles for roofing and decoration, were entirely overlooked. Generally speaking, the public did not understand form, but they did understand colour, and for that reason he thought colour might be more extensively used in suitable positions. He had experimented with colour in sculpture, and found that a piece of fine hard glaze for outdoor work came nearer to satisfying his ideas than any other material. He was particularly interested in salt glaze, which had certain qualities that appealed to him more than any other. Charming as it was, he rather thought the Della Robbia ware was not strong enough for the English climate, whereas a really good piece of the kind of fine glazed ware produced to-day was eminently suitable and satisfactory. He thought we had to develop not quite on the Della Robbia lines, but more in keeping with our northern climate. Glazed ware had a great future, especially if glazed reinforced concrete buildings were erected to any extent.

PROFESSOR OXLEY (Durban) said he had seen the Durban memorial since it had been erected, and was much impressed with it. The whole of the glazed ware arrived without any damage whatever. It was particularly suitable to the sunny climate of South Africa, where pigments were liable to fade. He hoped that when he visited England again he would find many coloured faience elevations brightening the streets of London.

MR. GORDON HAKE expressed the opinion that coloured glazed ware would be more frequently used in future, particularly in small quantities, to emphasise architectural features, but he was not an advocate for its extensive use for city buildings.

MR. GILBERT JENKINS said the question of colour in architecture was always a difficult problem. It seemed to be the general opinion that Portland stone was the best material for city buildings on account of its light colour; yet it was found that Portland stone frontages were being painted only twenty years after they were erected in order to brighten them. That raised the question as to whether it would not be preferable to use a glazed material that could be easily cleaned down, and that would resist the sooty atmosphere of our cities.

EXHIBITION NOTES

THE more we see of the Belgian and Flemish Exhibition at Burlington House, the more grateful we feel for the study of so fine a period of art, which included the work of Van Dyck, Rubens, Mabuse, Memlin, Van Eyck and others of this notable school of painting. The religious feeling which prompted so much of it may have largely disappeared, but the art still lives, and one could wish that much of the colour and variety of modern life had as sincere and worthy exponents.

The three galleries devoted to the work of the two dead sculptors, Hamo Thornycroft and Derwent Wood, exhibit some of the more beautiful and forceful work of modern sculpture The four large figures by Derwent Wood, Nos. 81, 83, 84 and 86, are fine typical female figures, and that of Atalanta is, to our thinking, one of the most delightful amongst all modern conceptions. But one of the sweetest and most telling of all this artist's works is the kneeling figure (183) which was exhibited at the R.A. in 1924. The refined and tender charm, the simplicity and breadth of the figure have surely never been excelled. Thornycroft's work may now be reviewed with fresh appreciation in the Gallery No. X, where one may find renewed pleasure in the groups and figures he produced with a happy mingling of vigour and refinement. These two sculptors are worthily memorialised in these three galleries at the Academy.

The Pastel Exhibition shows on its not overcrowded walls more good things than usual, though one can hardly feel that the special qualities of pastel are largely shown. There are groups of admirable drawings by Leonard Richmond, Wm. Redworth, Hans Richter, Leonard Squirrell, and Terrick Williams. There is still too much effort to simulate the effects of other media and a consequent loss of freedom and ease.

MEETINGS

MONDAY, *January* 17.

Royal Institute of British Architects.—Award of prizes and studentships: Criticism by Mr. R. Atkinson on the work submitted. President's address to students and presentation of prizes. 8 p.m.

Royal Sanitary Institute.—Mr. A. E. Munby on "Elementary Science." 6 p.m.

TUESDAY, *January* 18.

Royal Institution of Great Britain.—Mr. R. Whytlaw Gray on "Smokes as Aerial Disperse Systems." 5.15 p.m.

London University Lectures.—Mr. E. G. Richardson on "Acoustics of Buildings." At the University Physics Entrance, Gower-street, W.1. 5.30 p.m.

College of Estate Management.—Mr. G. Mould on "The Effect of Recent Legislation on the Law of Vendor and Purchaser." 5.30 p.m.

WEDNESDAY, *January* 19.

London Society.—Visit to the London Coliseum, St. Martin's-lane, W.C.2. 11.15 a.m.

THURSDAY, *January* 20.

Society of Antiquaries. 8.30 p.m.

Royal Institution of Great Britain.—Mr. J. R. H. Weaver on "Romanesque and Early Pointed Architecture in Spain (Eleventh to Thirteenth Centuries)." 5.15 p.m.

FRIDAY, *January* 21.

Royal Sanitary Institute.—Mr. A. E. Munby on "Elementary Science." 6 p.m.

THE SURVEYORS' INSTITUTION

On Monday last Mr. F. G. Baxendale, F.S.I., read a paper on the "Effect of Values of Town-planning Schemes in Their Various Stages" before this Institution. The stages referred to, said the lecturer, might be summarised in periods of time:—(1) Resolution: Date of resolution by Council to prepare scheme, to date of adoption of preliminary statement. (2) Preliminary Statement: Date of preliminary statement, to date of approval of same by Minister of Health. (3) Draft Scheme: Date of draft scheme, to date of approval of same by Ministry of Health. (4) Scheme.

Dealing with Stage I, Resolution, the lecturer said that a town-planning scheme was inaugurated by resolution of the council, to the effect, that they propose to apply to a defined area the provisions of the Town-Planning Act of 1925.

From the date of such a resolution this area was definitely earmarked for subsequent detailed planning, according to the Act, and subject to regulations which the Minister was authorised to lay down. The effect upon values would depend upon the wisdom and propriety of the scheme, adopted after consideration by, and consultation between, the Council, the owner, and the Ministry of Health, with their expert advisers. This stage had no effect which could be measured upon the value of land in the selected area. The power to include land outside the boundaries of the Council might affect its value to a marked extent. A rural belt might be linked to a developed or urban area, with facilities for roads, drainage, &c., which otherwise would be excluded from the provisions and undoubted benefits of the Act, because it formed part of a Local Government area where town planning was not at present compulsory. Similarly developed land might be shown within the scheme "to secure the general object of the scheme." Inclusion of such land in normal circumstances presupposed interference with its then condition, to bring uniformity into a proposed zone, to ensure the widening of streets, or to complete the site of an arterial road.

If the amount of land withdrawn from agricultural users was taken for the decade before the war, it was possible to forecast that, provided development proceeds at the same rate for the next 1,000 years, there would be no land left which was suitable for agriculture. The restrictions in town-planning schemes, at a modest estimate, would increase the demand for land by from 25 to 30 per cent. and thus accelerate the covering of land by buildings in that ratio, if other factors such as population and trade expansion remained constant.

Dealing with stages 2 and 3, Preliminary Statement to Confirmation of Scheme, the lecturer said that for present purposes these two stages might be dealt with together, especially as the Council sometimes omitted Stage 2, proceeding direct from resolution stage to draft scheme. During both stages, the scheme was gradually being modified and modelled into the final form. At Stage 2 the public local inquiry was always held, and the owner had his first formal opportunity of expressing his views, although he would, if wisely advised, have been in touch with the local authority in Stage 1. A second local inquiry was also held before the draft scheme was approved. Immediately the Council passed a resolution adopting the preliminary statement, the value of all the land in the scheme was affected, in some cases to a marked degree. From that point of time the land was subject to specified restrictions, some obviously beneficial, some from the owner's standpoint prejudicial, but all in theory devised in the interests of the community. No right to claim compensation yet had arisen; although some of the provisions carried with them a right to compensation on the final confirmation of the scheme, some carry no such advantage. To provide for this difficulty the Minister of Health had issued an order [Statutory Rules and Orders, 1922 (No. 927)] whereby an owner might apply to the authority for permission to proceed with development before the scheme is confirmed. These rules provided for an appeal to the Minister, if the owner was dissatisfied with the Council's decision, and a permission issued under these rules preserved the owner's right to claim compensation at a later date. The lecturer then dealt with a few points upon these provisions for which compensation was *not* claimable.

Zoning: Character.

As the character of a building was dependent upon its use, it had been assumed that the restrictions imposed would affect not only the style of its construction, but its subsequent user.

The Council were empowered to consent to certain exceptions in the character of building erected in certain zones, and could consent to modifications of user.

The main difficulties in connection with zoning arose from the complexities of our system of land tenure, the large number of owners, and the limited area available for certain necessary industries. The owner of a large area might be able to arrange matters so that what he lost on the swings, he gained on the roundabouts; but the small owner might suffer by character zoning. He might even be precluded from using his land for a purpose to which he was restricted by covenant, but the Ministry would, no doubt, take such matters into account before approving the scheme. An optimistic view might easily be taken of the amount of land required for domestic buildings, especially small houses; and for reasons relating to amenity reluctance to provide spaces for necessary trades might be shown even where such trades would enhance the value of land as well as the receipts from rates.

Zoning: Density.

The requirements of the scheme as to density would normally relate to dwelling-houses only, the density of other buildings being regulated under the provisions as to space about buildings. The density was measured in terms of "land units" as determined by the local authority, subject to appeal. A land unit might represent one plot, one owner's land, or even the land of a group of owners but limited to a maximum of 7 acres. The sum of the dwelling-houses on all the land units in a zone will equal the total area of the zone multiplied by the number per acre prescribed in the scheme.

The requirements of the schemes with regard to space about buildings would relate also to the use of land for purposes other than housing, which were difficult to deal with under the regulations as to density. In normal circumstances the scheme would provide that only a part of the site should be covered, varying with the height of the buildings. The proportion varied in different schemes, but in schemes already confirmed the maxima of three-quarters and two-thirds had been provided, in respect of buildings for trade. Special regulations were sometimes included in regard to buildings facing two streets.

Regulations under the draft scheme might fix a maximum height of buildings, a maximum number of stories, or a restriction prohibiting the erection of a building beyond a line drawn at an angle from the centre of the road, upon which the building abuts.

Referring to Stage IV, Scheme, the lecturer said that a town-planning scheme when confirmed by the Minister had all the force of an Act of Parliament, and in certain respects might override the by-laws current in the district. Moreover, it did not prevent the Council from putting into practice any local or general Act under which they were authorised to proceed. Compensation was claimable within the time stated in the Act, calculated from the date of confirmation except where the scheme otherwise directs. The period named is usually 12 months. With regard to the effect on land values at the making of the scheme, the measure of injurious affection or increase in value, upon the making of the scheme, would in normal circumstances, be represented by the difference in value of the claimant's land or interest before and after the imposition of the restriction. Damage would occur through excessive width of streets and interference with estate lay-outs, by severance and consequential damage to farm lands.

Regarding the effect of construction of streets, the lecturer said that certain items of claim were allowed to be deferred, on the ground that the damage would not accrue until works are carried out, and in most cases the owner would be well advised to agree to deferment. Where the Council, after the confirmation of the scheme, proceeded to enter and construct a street of *by-law width*, it was difficult to foresee how a claim would arise except where buildings or fully-developed land were involved; in any case, the damage fell to be ascertained subject to the restrictions imposed which might have formed the subject of a claim (if any) on the making of the scheme.

Speaking of the prohibition of advertisements, the lecturer said that the scheme might provide that, the display of an advertisement "in such a position or manner as to injure the amenity of any part of the area" was a direct contravention of the scheme.

Such a clause would no doubt have no effect upon advertisements already displayed before the date of resolution. The Model Clauses provided that a person desiring to advertise upon land might apply to the Council for permission.

Failure to refuse within one month might be taken as consent, and in the case of refusal there was an appeal to Petty Sessions. The Council might register trees within the area of the scheme which, in their opinion, should be preserved to secure amenity; this register might be included in the scheme or could be made *at any time*.

In conclusion, the lecturer stated that the scheme did not vest any land in the Council, but gave them power to acquire certain portions for particular purposes.

Now that the procedure of purchase had been brought within the regulations under the Acquisition of Land Act, 1919, it did not appear necessary to make more than a passing reference to the question. Where compensation had been paid on the making of the scheme, in respect of any matter, the value of the land upon purchase fell to be ascertained subject to the restriction or regulation imposed under the scheme. The scheme might be revoked, in whole or in part, and a new scheme might be approved by the Minister. In such circumstances compensation was payable, limited to expenditure incurred by the owner in conforming to the original scheme.

Belfast War Memorial.

On behalf of Sir A. Brumwell Thomas, of London, the architect who has been engaged on the war memorial scheme for the Belfast Corporation, the following statement has been issued in explanation of the delay in completing the conversion of the City Hall grounds into a Garden of Remembrance:—

"Sir Brumwell Thomas has for some years past been pressing, both at interviews and by letter, the Corporation to carry out the completion of the work, and he has expressed not once but several times to the Corporation his wish to carry it out at once; but the Corporation refuses to enter into the necessary short agreement with Sir Brumwell, putting him in a position to act. In all contracts affecting over £50, the usual and legal practice is for Corporations to execute a contract employing the architect under the seal of the Corporation, and this is necessary and desirable both in the interests of Corporations and of the architect. The law is quite clear upon the subject, both in Ireland and England, and the Royal Institute of British Architects has drawn the attention of its members to the necessity of having properly sealed contracts with all public bodies. Sir Brumwell has asked for this contract, and the Corporation refuses to give one and insists upon Sir Brumwell acting without any such contract. Sir Brumwell, who was the architect of the Belfast City Hall, is most anxious to complete his work at Belfast, and has expressed his willingness to deal with the matter at once and carry out his plans, which have been before the Corporation for some years, as soon as the contract has been sealed."

LEADING CONTENTS.

	PAGE
THE PROMISE OF THE NEW YEAR	39
NOTES	40
THE TREND OF 1926	44
ANCIENT HINDU ARCHITECTURE IN JAVA.—I	46
AMERICAN APARTMENT HOUSES.—I.	49
REGENT-STREET	51
PARTHENON STUDIES	52
ARCHITECTURAL STYLE	64
THE MONUMENTS OF HUNTINGDONSHIRE	70
THE WORK OF THE ARCHITECT	71
THE REPAIR OF ANCIENT BRIDGES	72
A RE-HOUSING SUGGESTION	75
PARTY WALLS: PRACTICE AND DECISIONS	78
THE LONDON BUILDING ACTS—I.	80
COMPETITION NEWS	81
GENERAL NEWS	81
CORRESPONDENCE	82
ARCHITECTURAL ASSOCIATION	83
MEETINGS	84
THE SURVEYORS' INSTITUTION	85
OBITUARY	88
LEGAL LIABILITIES OF ARCHITECTS AND CONTRACTORS.—II	89
ARCHITECTS' AND BUILDERS' INQUIRY BUREAU	90
THE BUILDING TRADE	91
BY-LAWS RELATING TO BUILDINGS AND STREETS	91
CONCRETE MACHINERY AND PLANT	92
NEW IDEAS FOR SPEEDING-UP BUILDING	93
CAST STONE: ITS POSSIBILITIES AND ITS MANUFACTURE	94
RATES OF WAGES IN THE BUILDING TRADE	97
CONTRACTS, COMPETITIONS, ETC.	98
PROPOSED NEW BUILDINGS AND OTHER WORKS	101
PRICES CURRENT OF MATERIALS	103
THE SCOTTISH BUILDER	104
BUILDING TRADE WAGES IN SCOTLAND	104
CURRENT PRICES FOR BUILDING WORK IN LONDON	105
TRADE NEWS	106
TENDERS	106

ILLUSTRATIONS

"The Builder" Map.

We inset, by special permission of the London County Council, a map showing the boundaries of the Surveyors' Districts under the Building Acts. There is no need for us to emphasise the value of this map to all who are concerned with the carrying out of building work in the L.C.C. area.

"The Builder" Calendar.

The subject of our Calendar is the new Piccadilly Circus, as rebuilt to the elevational designs of Sir Reginald Blomfield, R.A., who has also been responsible for the external elevations of the Quadrant, Regent-street, a glimpse of which is shown in our view. Mr. J. J. Joass, F.R.I.B.A., is the architect for Messrs. Swan & Edgar's (the middle block of buildings in the illustration), and Messrs. Higgs & Hill, Ltd., are the general contractors. The block shown on the right hand side is the new building for the County Fire Office, Ltd, the architects for which are Messrs. Ernest Newton, R.A., & Sons, and the general contractors Messrs. Holloway Bros. (London), Ltd.

New Headquarters, Lloyds Bank, Ltd.

The new building for Messrs. Lloyds Bank, Ltd., now in the course of erection, will occupy a fan-shaped site with frontages to Cornhill and Lombard-street, of 146 ft. and 198 ft. respectively, and will house both the Head Office department and the City Office. The accommodation, apart from the basements, will be provided in eight stories above the street level, the ground floor and the mezzanine floor immediately above being devoted to the City Office, the remainder being allocated to the Head Office.

The structure will be of steel-framed construction, and the main fronts are to be faced with Portland stone with granite plinths, window jambs, and keystones to the ground floor arcaded story. The entrance doors are to be of bronze enclosed in a marble surround, and the infilling of the arched window openings will also be of bronze.

The banking hall on the ground floor, which is planned on an axial line equidistant from both sloping fronts, will be finished with marble wall linings, columns, floor and counter, the latter enclosed with metal grilles.

The contractors for the work are Messrs. Trollope & Colls.

The architects are Sir John Burnet & Partners and Messrs. Campbell Jones, Sons, & Smithers, with Dr. Oscar Faber acting as structural engineer.

The Royal Mail Steam Packet Co's. Head Building.

This building is being erected on a site adjoining Lloyd's new building, with frontages to Leadenhall-street and Lime-street. Both façades are in Portland stone. There are two basements and seven floors above the ground. The builders are Messrs. Trollope & Colls. The general foreman is Mr. H. Goodman, and the clerk of the works is Mr. W. Le Marie.

Sir Edwin Cooper is the architect for both the Royal Mail building and the new Lloyd's.

Star and Garter Home, Sandgate, Kent.

The site of this building is in private grounds overlooking the sea. Every advantage has been taken in planning to provide loggias and terraces, from which shelter and fine views are obtained. The building is of brick with rendered walls, and the roof is tiled with local tiles; there are sash windows with green shutters. On the ground floor are the administrative offices, reception and recreation rooms, and a fine memorial dining-hall, with two wards for patients, each for seven beds, overlooking the garden front. The upper floors are entirely given up to the patients' wards and bedrooms, and accommodation for the staff.

The main contractor is Mr. G. Jackson, with Mr. S. Braine as general foreman. The clerk of the works is Mr. G. Hooper.

Sir Edwin Cooper is the architect.

Stratton House, Piccadilly.

We give this week a drawing of the proposed new block of flats, to be named Stratton House, on which the builders are soon to begin operations. It will have an extensive frontage to Piccadilly, and an unobstructed view over the Green Park looking south, the east front to Stratton-street and the west overlooking Bolton-street. The ground floor will be used for banking and business purposes, and the whole of the upper floors will be built as flats having large airy rooms, many of them with balconies and with an unusual number of bed and bath rooms. The plant for heating, hot and cold water supply, &c., will be arranged in a sub-basement. The flats will be built of fireproof construction throughout, with central heating on the panel system, in addition to open fireplaces and electric fires, and the modern systems of gas and electric cooking arrangements. The elevations of the building will be in Portland stone.

Mr. W. Curtis Green, A.R.A., is the architect, and the builders Messrs. Holloway Bros. (London), Ltd.

Spitalfields Market.

Spitalfields Market covers an area of 125,000 sq. ft., or about 2¾ acres, and consists of stands on the ground floor let on weekly tenancies for the sale of fruit and vegetables, and on the first floor a number of residential flats. The original scheme of improvements proposed by the City Corporation, who own the market, was superseded by a new scheme, approved by the Departmental Committee on Wholesale Food Markets, and the necessary powers were obtained in the City of London (Various Powers) Act, 1922. This Act also authorised the holding of the market on every day of the week except Sunday, and the levying of toll on the sellers or salesmen in the market in lieu of the senders, but this provision does not come into operation until the improvements are effected.

It is estimated that the extension will cost £2,000,000, and the Corporation is authorised to raise a loan for that amount. The present capacity of the market will be nearly doubled, the total area then being five acres. Extension is being made westwards from the present market. The scheme has necessitated the acquisition of surrounding properties at a cost of over £500,000. The extension will be 98,220 ft. super on the ground floor and 101,440 ft. super in the basement as a result of tunnelling under the existing market. Thirty-four warehouses, with storage space above and below, will be erected on three sides of the extension. When the scheme is completed the market will have a total street frontage of 2,000 ft., and the aggregate frontages of the warehouses and stands will exceed a mile and a half. So that traffic may be able to circulate freely in the market the interior will be divided into main avenues 25 ft. wide, and others 20 ft. in width, and to these there will be five entrances from Lamb-street, five from Brushfield-street, three from Commercial-street, and three from Steward-street.

It was intended that the entire structural work should be of steel, but the coal stoppage and the consequent cessation in the production of steel led to the abandonment of this form of construction in favour of ferrocrete, the rapid-hardening Portland cement, for a portion of the work.

Over an acre of glass will be used in the skylights over the new roof, and more than 4,500 tons of concrete; 24,000 tons of sand and ballast and 2,000 tons of constructional steel will be required by the contractors, Messrs. John Mowlem & Company, Ltd., of Ebury Bridge-road, S.W. 1. The architect of the scheme is Mr. Sydney Perks, F.S.A., the City Surveyor.

Considerable street improvements form part of the scheme. Parts of the widened streets will be used as "lay-byes" to facilitate further the business of the market. Lamb-street, on the north, which was about 23 ft. wide, has been temporarily widened to 36 ft., and will ultimately be made 60 ft. wide; Brushfield-street, on the south of the extension, which is now about 31 ft. wide, will also be widened to 60 ft.; Crispin-street, on the west side of the present market, is being built upon and included in the market; and Steward-street, on the west, now about 33 ft. wide, will be made 80 ft. wide. A large number of people have been dispossessed of their former homes by the scheme. They are being re-housed on two sites which the Corporation acquired in the borough of Stepney. Two blocks of dwellings have been erected.

With the three large lavatories, the total cost of the work now being carried out at Spitalfields will be over £310,000.

We are informed that, in connection with this work, Messrs. Cowan Hulbert's "Insley" excavator and "Rooshor" patent adjustable shore are being used. "Conforms" patent stamped steel centering is also being used on this job.

British Mercantile Marine Memorial.

Our illustrations this week include one of the proposed memorial to be placed on Tower Hill to the men of the British Mercantile Marine who died in the war, which has been designed by Sir Edwin Lutyens, R.A. It will have inscribed upon it the names of 12,000 men of the Mercantile Marine whose graves are the sea, and is to take the form of a vaulted corridor 64 ft. long, divided into three bays, with archways at each end, 8 ft. wide and 21 ft. high. The memorial will be placed on the south side of Trinity-square, bordering a public footway.

High Altar and Reredos, Ampleforth Abbey.

This work has been lately completed in the new Church at Ampleforth Abbey, Yorks, from the designs of Sir Giles Gilbert Scott, R.A.

The general contractors were Messrs. Holloway Bros., and the following were sub-contractors: W. D. Gough, models of reredos; J. F. Booth & Son, Banbury, reredos; Watts & Co., hanging rood; G. N. Haden & Sons, Ltd., heating.

Forestridge, Sussex.

This was an old house and has been entirely remodelled. The work is now being completed, and makes an interesting group of buildings abutting on to what is practically a private road. The materials used are Sussex bricks

and tiles, with a small quantity of Portland and local stone.

The architect is Sir Edwin Cooper.

Bath War Memorial.

This memorial, designed by Sir Reginald Blomfield, R.A., has for its principal feature that architect's Great War Cross set in front of a semi-circular curtain wall, in the middle of which, at the back, is a specially treated panel space for the names of the fallen. Steps lead up on either side of the Cross to a raised platform, the front of which is protected by some simply designed wrought-iron railings.

The Ocean Accident & Guarantee Corporation, Ltd.

This new building has been erected at 36-44, Moorgate, E.C., from the designs of Sir Aston Webb, R.A., & Son. The portion now completed replaces four houses fronting towards Moorgate, which were altered and adapted at various times, but had become insufficient to accommodate the increasing staff of the Corporation. The new building, which is exceptionally well-lighted, is steel-framed and of fireproof construction throughout. The frontages are faced with Portland stone. The emblem of the Corporation (a lighthouse) on the angle of the building is the work of Mr. Alfred Drury, R.A.

The building consists of nine floors, seven of which are used as offices, and there are two basements below the level of the street, which contain strong rooms, heating apparatus, electric switch rooms, stationery stores, large cloak rooms and lavatories for the staff; and, in addition, two rooms, each containing about 3,000 ft. of floor space, which are fitted with shelving in racks for filing the many thousands of records in connection with the business of the Corporation. These files are so arranged that any document can be found in a few moments and dispatched by a specially-fitted electric paper lift to the department calling for it. The whole of the woodwork and joinery, including the panelling of the general office on ground floor, is of fine quality teak. The furniture and fittings throughout are also of teak, and have been specially designed by the architects to suit the needs of the various departments.

The large electric passenger lift has a speed of 200 ft. per minute. The stairs and landings are covered with rubber, and the large space in front of counter in the general office on ground floor is also paved with rubber flooring. The entrance vestibule, which is lined and paved with marble, contains four fine columns from Italian quarries. In this vestibule is placed the memorial to those members of the staff who fell during the war; this was removed from the old building and carefully stored during the reconstruction. In the vestibule are placed also the two private post boxes of the Corporation, which are cleared periodically by special arrangement with the Post Office.

The main entrance doors and the ground floor window frames are of bronze and the specially designed window grilles of gilded wrought-iron. The board room has finely quartered figured panelling.

The building is warmed throughout by hot-water, and a system of fans and ducts for supplying fresh air and extracting vitiated air has been provided. A vacuum cleaning plant has been installed, with nozzles on each floor connected by piping to a powerful extracting plant placed in the basement. The building is protected against fire by a system of hydrants placed on each landing of the staircase. Special arrangements for the escape of the staff from the upper floors of the building in case of emergency have been made.

The general contractors were Messrs. Leslie & Co., and the following were sub-contractors: Pollard & Co., interior fittings; Middleton's, wiring; Hawkins & Co., lighting bulbs, &c.; Waygoods, lifts; Wontner Smith, Gray & Co., boilers; Dent & Hellyer, sanitary fittings; Leylands, rubber flooring, &c.; Bainbridge Reynolds, grilles; Clintons, electric clocks; Sturtevant Co., vacuum cleaners; Biancola, staircase works; Dorman Long & Co., steelwork; Farmer & Brindley, marble; Henry Hope, Birmingham, metal skylight; J. R. Pearson, Ltd., overhanging clock; Val de Travers, asphalt; Gilbert Seale & Son, plaster work.

House Near Ightham, Kent.

This house, designed by Messrs. Baillie Scott & Beresford, is at Raspit-hill, near Ightham, Kent, and is of brick with a certain amount of half-timber work. A special feature is the sun-room, at the south-east corner of the house, having windows running almost the entire length of the west, south and east walls. This house has been recently completed. The general contractors were Edward Punnett & Sons, Ltd., of Tonbridge; central heating, domestic hot-water, and electric plant, by the Abbey Heating Co., of Westminster; leaded glazing and metal casements by Geo. Wragge, Ltd., Manchester; sanitary fittings by Messrs. Pontifex and Messrs. Doulton; lead heads and wrot-iron work by Cashmore Art Workers, Ltd.

Messrs. Atkinson's New Premises, Old Bond-street.

The premises of Messrs. Atkinson's, the well-known Bond-street perfumiers, were damaged by fire some time ago and have now been rebuilt to the designs of Mr. E. Vincent Harris. The elevations are very skilfully handled and the shop-front treatment is uncommonly effective. A feature of the exterior is a turret containing a carillon, which provides Bond-street with the novelty of musical interludes. Following is a list of the sub-contractors:—Norman & Underwood, cast lead roof, &c.; Gillett & Johnston, bells in turret; Anselm Odling, marble flooring, &c.; Luxfer Co., lead glazed windows, bronze grilles and pavement lights; Hetley, glass work in shop (mirrors); Mr. Nathaniel Hitch, carving; G. Jackson & Sons, Ltd., fibrous plaster work; J. Jeffreys, Ltd., heating and ventilation, &c.; Grierson, Ltd., electric lighting; F. G. Howard, ceiling lustres; Archibald Dawnay, Ltd., steelwork; Waygood-Otis, Ltd., lifts.

Mount Pleasant New Letter Sorting Office.

The new Post Office building at Mount Pleasant, near the junction of Rosebery-avenue and Farringdon-street, has lately been erected for the purpose of connecting the letter sorting divisions of this Central Post Office Sorting Depôt, which work has hitherto been carried out in the existing building, together with parcel work. The basement is planned mainly for stores and staff purposes. The ground and first floors are wholly devoted to the sorting of letters, and the second floor is used by administrative and clerical staffs. Lifts and conveyors connect the floors, and connection with the existing building is obtained by conveyors, bridges and a subway. The building is of reinforced concrete construction throughout, the external face being finished with "Atlas White" cement. The reinforcement, which was designed by H.M. Office of Works, consists of mild steel rounds up to 1½ in. diameters and many of the bars are over 50 ft. long. Portland cement, ¾ in. ballast and sand from the river Lea were used for the concrete. Keene's cement is used internally. The loading yards are covered with glass roofs and steel trusses.

The general contractors were Messrs. Galbraith Bros., Ltd., of Camberwell, other contractors being:—Hollis Bros. & Co., Ltd., maple wood block floors; Williams & Williams, Ltd., steel casements; Hy. Hope & Sons, Ltd., lantern lights; The Carron Company, cast-iron railings; Clark, Hunt & Co., Ltd., wrot-iron railings; The Neuchatel Asphalte Co., asphalt, roads and roofs.

The architect was Mr. A. R. Myers, A.R.I.B.A., F.S.I., of His Majesty's Office of Works.

Garden Gate, Nether Winchendon Priory.

The garden gate in fine wrought ironwork which we illustrate this week is from the designs of Mr. Philip Tilden, and is a detail of his work at Nether Winchendon Priory.

Long Crendon Manor, near Thame.

We illustrate in this number some exterior views of Long Crendon Manor, near Thame, the work of Mr. Philip Tilden. In this an old manor house has been assimilated into the design, which is partly brick and partly in half-timber Tudor style. The interior is largely designed and furnished to suit the period, with oak beam-work and large open fireplaces.

"Magna Charta," Runnymede.

This is usually accepted as being the spot on which the original Magna Charta was signed. The house, however, dates only from about 100 years ago, and was originally a small cottage, erected in quasi-Norman style. This was added to several times. The recent alterations, the work of Mr. Robert Atkinson, F.R.I.B.A., consisted of bringing the house up to date and increasing its accommodation. A good portion of the previous additions were pulled down, but the original cottage was left practically intact and the new additions built to harmonise with it, although the new work is built in brick and distempered externally, as it was found impossible to execute the work in hard chalk, which is the material of the original house.

New Stations at Ramsgate and Margate.

These new stations have been recently completed for the Southern Railway. Architecturally they are excellent, and show a great advance, both in design and planning, upon anything of a similar type and scale produced in this country within recent years. The stations have been designed in the Engineer's Department of the Southern Railway. Messrs. Rice & Son of London and Margate were the contractors for Margate Station and Sir Robert MacAlpine & Sons for that at Ramsgate.

"Four Winds," Bidborough, Kent.

This house lies just below the crest on the southern slope of Bidborough Ridge, and faces due north and south, with a very fine view over broken and wooded slopes to the south towards Sussex border. The house has been planned to have as many rooms as possible facing south, including an open loggia leading on to a paved terrace, while all bedrooms have wardrobe cupboards and h. and c. lavatory basins fitted. The living-room and den are fitted with coal fires, the house having a complete central heating system throughout in addition. There is electric light with power points throughout, the house being also wired for wireless reception in most rooms.

The elevation is in the Kentish traditional style modernised to suit the neighbourhood, while the general "shape" of the house externally has been designed to withstand exposure to heavy south-west and south-east gales.

The masonry is multi-coloured sand-faced, kiln-burnt facing bricks, set in compo mortar, with wide joints (not pointed), while the old tiles for roof were obtained from pulling down of the barn, cherry-red, hand-made, sand-faced vertical hanging tiles being used to walls above ground floor. All valleys are swept. The style of the windows is lead lights in steel casements, fitted into stout wood frames. The kitchen, lavatories and bathroom are covered with jointless composition flooring; the remainder of the ground floor with Oregon pine blocks set in herring-bone fashion and polished; deal flooring to bedrooms.

The loggia, porch, &c., are paved with 6 in. by 6 in. quarry tiles set square with 1 in. cement joints, slightly raked out to prevent slipping. while the terrace is paved with random square York stone slabs with York stone retaining wall and coping.

Messrs. Arthur W. Cooksey & Partners were the architects, while the general contractors were Messrs. Strange & Sons, Ltd., of Tunbridge Wells, Kent.

Among the chief sub-contractors were:—High Brooms Brick and Tile Co., Ltd., facings; Roberts Adlard & Co., tiling; White & Co., central heating and domestic hot water; Stevens & Adams, wood block flooring; The British Magnesite Flooring Co., patent flooring;

Dent & Hellyer, Ltd., sanitary fittings; Lips, Ltd.,, London, ironmongery; Crittall Manufacturing Co., Ltd., steel casements; Nicholls & Clarke, lead lights; Woco Door Co., internal doors; Vulcanite, Ltd., flat; R. Gay & Co., Ltd., paint and distemper; Septic Tank Co., Ltd., septic tank; Strange & Sons Electrical Engineering Co., Ltd., electric lighting and power; Needwood Plaster and Cement Co., Ltd., plaster; and Candy & Co., Ltd., coal fire interiors.

The Vicarage, Hadlow, Kent.

This house, designed by Messrs. Arthur W. Cooksey & Partners, faces east and west, and has a long frontage so as to make what is really a small house look as imposing as possible. Although domestic in character, there has been an endeavour to retain the expression of a semi-official residence, *i.e.*, the centre around which village affairs revolve.

The bricks used are grey-brown, mottled, hand-made facings set in compo mortar with wide joints (not pointed). Moulded red brick window dressings.

Hand-made sand-faced tiles of dark brown colour mixed with a proportion of dark reds were used in vertical tiling employed to the centre portion of back elevation in brown-red sand-faced tiles. All valleys are swept.

The general contractors were Hyder & Sons, of Shipbourne, Kent, while the following were the principal sub-contractors: — Thomas Lawrence & Sons, facing bricks, moulded window bricks and tiles; Drytone, Ltd., internal doors; Lips, Ltd., ironmongery; R. E. Pearse & Co., Ltd., steel casements and lead lights; Vulcanite, Ltd., flats; Dent & Hellyer, Ltd., sanitary fittings; R. Gay & Co., Ltd., paint and distemper; The Gasworks, Tonbridge, gas fittings; Needwood Plaster and Cement Co., Ltd., plaster; and Nautilus Fire Co., Ltd., gas flue blocks and terminals.

Carreras' New Factory.

The new factory at Mornington-crescent, for Messrs. Carreras, Ltd., of which we give an illustration this week, has been designed by Messrs. M. E. & O. H. Collins in collaboration with Mr. A. G. Porri. The general contractors are Messrs. Sir Robert McAlpine & Sons; while Mr. C. T. Worsell is the clerk of works. The factory which is estimated to cost £500,000, will be the largest all-reinforced concrete building in London. We understand that the plant used by the contractors for the excavation is the "Insley" excavator and boom-plant, supplied by Messrs. Cowan, Hulbert, Ltd., of Abbey House, Westminster.

Old Cottage, Bidston, Cheshire.

The cottage illustrated is one which has existed on Bidston Hill, together with two or three others, for two hundred years or so. When it became the property of the present owner it was situated in the centre of his garden and in many ways interfered with the probable lay-out. He was unwilling to demolish the cottage, and decided to renovate it and add to it and make it serve as a playhouse for his children. The whole of the stonework for the alterations was obtained from the walls of the old shippon, and as far as possible no existing work was disturbed in the building. The additional new room built on the site of the old shippon has been carried out with due thought to the old cottage feeling and finish, and with the exception of the smoke-room illustrated is devoted to the use of the children. The bird bath shown in the illustration is formed of an old pig trough found on the site. The contractors for the work were Messrs. Milestones & Sons, Wallasey. The crazy paving to the paths was carried out by Messrs. Stubbs & Sons, Liverpool.

Mr. J. E. Rowlands, L.R.I.B.A., of Liverpool, was the architect.

R.I.B.A. 1926 Examinations.

The questions set at the Intermediate, Final and Special Examinations held in November and December, 1926, have been published, and are on sale at the Royal Institute, price 1s. 6d (exclusive of postage).

OBITUARY

Sir Francis Fox.

We regret to announce the death of Sir Francis Fox, at his residence at Wimbledon, in his 83rd year.

Sir Francis Fox began his career as an engineer in 1861, when he was 17 years of age, and, in association with his elder brother, Sir Douglas Fox, first in his father's firm of Sir Charles Fox & Sons, and later as a member of the firm of Sir Douglas Fox & Partners, he had a share in carrying out many important engineering works, especially railways and tunnels, during the latter part of the last century and the earlier years of the present one.

In his later years Sir Francis Fox became almost a specialist in the preservation of cathedrals and other ancient buildings, and for this purpose he made extensive use of the Greathead grouting machine, which had been invented to fill in with cement the voids outside the cast-iron segments of the London tube railways. Perhaps the most conspicuous instance in which he applied this method was that of Winchester Cathedral (1905–1912), but under his advice it was also employed at Canterbury and Lincoln, not to mention various old bridges and churches at Ashbourne and elsewhere.

Besides professional papers, Sir Francis Fox, who received a knighthood in 1912, was the author of "River, Road, and Rail," and of works on the Mersey and Simplon Tunnels, the Cape and Cairo Railway, and the saving of Winchester Cathedral. In 1924 he published an interesting volume of reminiscences, "Sixty-three Years of Engineering: Scientific and Social Work."

F. Cayley Robinson, A.R.A.

The death is announced of Mr. Frederic Cayley Robinson, A.R.A., who died on Thursday of last week, at the age of 64. He leaves a remarkable body of work, including many series of mural panels, distributed among a wide variety of buildings and galleries throughout the Kingdom, as well as in America, the Dominions, Italy and France. The Royal Society of Painters in Water Colours, which he joined in 1919, made him its vice-president, and two years later he was admitted an A.R.A. Among his best work in London, besides his "Pastoral" in the Tate Gallery, bought under the terms of the Chantrey Bequest, is the set of emblematic panels he did for one of the foyers of the Middlesex Hospital at the commission of Mr. Edmund Davis.

Ernest Fiander Etchells.

We regret to record the death of Mr. Ernest Fiander Etchells, who died on Wednesday of last week at Balham, at the age of 50. He was an authority on concrete and steel construction, and held the office of structural engineer in the department of the Superintending Architect of Metropolitan Buildings at the County Hall. He was trained at Manchester, Glasgow, and King's and University Colleges, London, and was a pupil of F. L. Lane, of Leeds, and of John Strain, of Glasgow. He was a past president of the Concrete Institute (the Institution of Structural Engineers), and the Association of Architects, Surveyors, and Technical Assistants, and honorary president of the Association of Floor Constructors, honorary A.R.I.B.A., and honorary member of the British Engineering Standards Association. For the present year, 1926–27, he was president of the British section of the Société des Ingénieurs Civils de France.

H. P. Boulnois.

Mr. Henry Percy Boulnois, the municipal engineer, died in London, on Sunday, at the age of 80.

Born on January 15, 1846, at St. John's Wood, he was educated at Pocklington Grammar School and King's College, London. After spending a year on railway construction in La Vendée, he was articled to Sir Joseph Bazalgette, the chief engineer to the Metropolitan Board of Works. In 1870, at the end of his pupilage, he was appointed a district engineer in Jamaica, but resigning for reasons of health after two years' service, he returned to England, and at the end of 1873 was chosen city surveyor of Exeter. In 1883 he became Borough Engineer of Portsmouth, and seven years later City engineer of Liverpool. The latter position he resigned in 1897, again on account of ill-health, and entered the Local Government Board as engineering inspector, retiring in 1911 as deputy chief engineering inspector.

Mr. Boulnois was the author of "The Municipal and Sanitary Engineer's Handbook" (1883). He served as president of the Institution of Municipal and County Engineers and of the Liverpool Engineering Society, and as chairman of Council of the Roads Improvement Association.

Fred Rowntree.

We regret to record the death of Mr. Fred Rowntree, F.R.I.B.A., of 11, Hammersmith-terrace, W.6. Born in 1860, Mr. Rowntree was articled to Mr. C. A. Bury, of Scarborough, afterwards coming to London, where he worked under Edward Burgess. He was more than usually successful in competition, of which one of the more important was the West China Union University, Chengtu, China, which he built in conjunction with his sons, Douglas W. and Colin Rowntree, AA.R.I.B.A. Other works of his are Bootham School, York; The Scottish Temperance Life Assurance Buildings in Cheapside, besides a number of educational establishments and, in association with his sons, Newspaper House, Fleet-street.

Delissa Joseph.

Mr. Delissa Joseph, F.R.I.B.A., died last Monday, in his 69th year. The son of Mr. Isaac Solomon Joseph, he was born in January, 1859, and was educated at Durham House School, and Jews' College. He began practice in 1882, and was soon busily employed in designing synagogues, flats, country houses, factories, and warehouses, blocks of offices, banks and insurance offices, shops, and superstructures of railway stations. About 1886 he was called in to design the bulk of the new buildings occupying the former site of St. Paul's School, between St. Paul's Churchyard and Old Change. He was a member of council of the Royal Institute of British Architects, 1922–3, of the City of London Conservative Association, of Jews' College, and of the Anglo-Jewish Association. Among Mr. Joseph's buildings in London are the Rembrandt and Coburg Court Hotels; Peninsular House, West India House, and Bond Court House, in the City; FitzGeorge and FitzJames-avenues, West Kensington, Rutland Court and Gardens, and Chelsea Court; and superstructures on Tottenham Court-road, Marble Arch, Knightsbridge, Hyde Park Corner, Moorgate-street, and Chancery-lane stations.

Essays on Old London.

An illustrated volume of Essays on Old London, by Mr. Sydney Perks, will shortly be issued by the Cambridge University Press. The essays deal with the restoration and recent discoveries at the Guildhall, London town-planning schemes in 1666, and the scheme for a Thames embankment after the Great Fire of London.

The Old Ely House.

A dispute, involving a relic of mediæval architecture, has arisen between the rector of the Roman Catholic church of St. Etheldreda, Ely-place, and the owners of two adjacent properties in Hatton-garden. The church represents the chapel, crypt, and cloister of the chapel of Ely House, at one time the London residence of the Bishops of Ely. In connection with the rebuilding of two properties in Hatton-garden, the owners wish to pull down a wall which is nearly all that remains of the residential part of Ely House, which is distinct from the ecclesiastical part. They claim that this is a party wall, over which the law gives them control, and that it is so weakened by age that it would not safely support the new buildings to be erected. As a result of representations made to the owners concerned, there had been an informal "stay" for a week or two, pending further developments. Meanwhile the rector is endeavouring to have the stone wall scheduled for preservation by the Royal Commission on Historical Monuments. Failing that, the question as to whether it was a party wall may have to be decided by a court of law.

LEGAL LIABILITIES OF ARCHITECTS AND CONTRACTORS.—II

[Following is the conclusion of a paper on this subject, read recently by Mr. William E. Watson, Barrister-at-Law, before the Northern Polytechnic. The first part appeared in our last issue.]

In another case of negligence before the Court of Appeal, an architect brought action against his employer who had engaged him to design and superintend the construction of a residence. A contract was entered into and the contractor did not properly execute the work. The architect complained of the quality of the work and the employer complained of the architect's negligence in permitting deviations from the contract; later the employer placed the matter in the hands of his solicitors; the contractor presented a claim for £700 and brought action for that amount. The architect eventually gave his final certificate for a little over £100, and upon that certificate the employer successfully defended the action brought against him. The architect then brought action for £123, the amount of his fees. The employer counterclaimed for damages for negligence in not giving proper supervision and in permitting or neglecting to prevent various deviations from the contract. The architect denied negligence and contended that as his certificate had been accepted and acted upon it was binding upon him under the 16th clause of the contract. The jury found negligence and that the architect had certified for more than he ought to have done. They found for the architect £58 and for the employer £90, and judgment was given accordingly. The case went to the Court of Appeal on the ground that the verdict of the jury was against the weight of evidence, and the motion for a new trial was dismissed.

In another case an employer took a lease of premises and arranged with the freeholders' architect for the preparation of a design for a picture gallery to house valuable pictures. After completion the pictures were found to be affected by mildew owing to defective ventilation. The judge put the following questions to the jury:—1. Was the contractor guilty of negligence? 2. Was the architect guilty of negligence in designing and superintending the construction of the building? The jury found no negligence in the contractor and found negligence in the architect, assessing damages against him.

These were ordinary everyday points which arose in an architect's practice; they were pitfalls into which the well-trained and prudent person need not fall. Some cases had been considered by the Royal Institute of British Architects, and the "Conditions of Engagement," revised in 1909, gave expression to them; this document was one which the young architect should study to realise the extent of the duties he owed to his employer, and he should also diplomatically ensure that at the earliest moment the employer also had a copy of that document, thereby setting up the semblance of a contract for future payment. So much for the architect's liabilities; on the other hand, the builder's liabilities might be said generally to cease when he had been granted a final certificate. By this time any defects which had accrued would be rectified and he would go free. A contractor was defined as one who undertook or contracted to supply certain articles or to perform any work or service for a certain price or at a certain rate. Contractors as much as architects must possess the requisite skill to carry out what they undertook, and in large works very great skill and ability were required; if a contractor professed to be a specialist as to any particular class of work he might, when no architect was employed, be liable for negligence and want of skill in planning and designing the work as well as being liable under his contract to carry it out. The employer normally owed no duty to the contractor to superintend, and it was the duty of the contractor to discover for himself if he could possibly perform his part of the contract before signing the document. Not to do so would be an exhibition of blind confidence of an unreasonable kind, but nevertheless it was a very common one. The contractor relied upon the skill of the architect who had prepared the particulars upon which the estimate was based, but in law he probably did so at his own risk entirely. This was based upon the principle that the contract was between the employer and the contractor; in the contract the architect was named, but he owed no duty to the contractor, because the contractor did not pay him.

The architect's duty (until the arbitration stage of the contract was reached) lay solely towards the employer, and if he did not guarantee the work done by the architect the onus was upon the contractor to make a thorough completion in a workmanlike manner of that for which he contracted. If this was not done, or was performed in so negligent and unskilful a manner as to be quite different from that contracted for and therefore useless to the employer, he might refuse to pay for it at all and might give the contractor notice to remove it from the site. If, on the other hand, the employer accepted the work he must pay a fair value for it. Useless work, according to this rule, was that which would have been useful but for the carelessness or lack of skill on the part of the contractor, but it did not include useless work performed skilfully. It was no excuse for a contractor doing useless work to prove that it could not be done otherwise unless he told the employer or could prove that the employer had knowledge of such impossibility. For instance, a contractor was employed to put up a new kitchen range with an old boiler behind. Hot water could not be got from the boiler, the flues not being efficient. The contractor said the space was not sufficiently large to make the flues effective; the employer replied that if he had known this he would not have had the work done at all; the employer won his case on the ground that the work was done in an improper and unworkmanlike manner.

The architect's liability might be said generally to lie in an action for negligence; on the other hand, that of the contractor might lie in negligence also, but it might also lie in trespass or nuisance. It was prima facie trespass if a contractor in any way interfered with the property belonging to another, and it had been held that an action of trespass could be maintained even upon driving a nail into the wall belonging to an adjoining owner. Nuisance also might be maintained against a contractor for raising a building so that the lights of a dominant owner were prejudiced. Nuisance might be defined as "any act which without direct physical interference materially impairs the use and enjoyment by another of his property or prejudicially affects his health, his comfort or convenience." So it would be appreciated that there were many duties within the purview of a contractor from which an action for nuisance might flow; it might be contended that the contractor was covered because he was acting upon the instruction of the owner or his agent, but it was no defence for a person to say he did a wrongful act or he did a lawful act in a wrongful manner on the instruction of someone else. It was obvious that would be no defence in a criminal action, and prima facie it was no defence to a civil action. On the other hand, where action was brought against a building owner it had been held no defence to say he employed a competent contractor to perform the work.

It had been said that lack of diligence or prudence connoted negligence, and this was illustrated by a case where the owner of a house brought action against builders claiming damages because in course of rebuilding an hotel they caused cracks and other defects in plaintiff's adjoining house. The builders contended, first, they were performing the work under the provisions of the Metropolitan Building Act; secondly, the defects were a necessary consequence of the work; and thirdly, the claim should be made against the building owner. It was held the Metropolitan Building Acts did not exonerate a builder from liability for damage which had arisen by his negligence and want of care or skill, and the plaintiff won his case. Lack of diligence or prudence on the part of a contractor might also connote nuisance, as was illustrated by a case in which plaintiffs were owners of an old house which, although infirm, was held by the judge to have been in a stable condition. Defendants were contractors for making the foundations of a very large building to be erected opposite plaintiff's house, and in the course of their operations it was necessary to drive a large number of piles through the soil into the London clay, which lay at some depth. The pile-driving began in November, 1920, and it was proved that vibration arising therefrom was felt in the plaintiff's house and also in the adjoining houses. Shortly afterwards grave structural defects appeared in the plaintiff's house, in consequence of which an order was made for its demolition as a dangerous structure. Plaintiffs claimed damages from the contractors, who alleged (1) that the vibration from the pile-driving could not cause damage; (2) that if it had done so plaintiff's house, on account of its age and unstable condition, was not entitled to limit the defendants' lawful operations on their own land. It was held by the Court (1) that the damage was caused by the vibration; (2) the age and condition of the house were not such as to free the contractor from liability.

The contractor normally carried a responsibility and consequent liability with regard to compliance with building regulations in force. For instance, an owner employed a contractor to erect a building in London, and after completion a notice was served by the County Council to demolish and rebuild upon the grounds that the mortar was not composed of one part of lime to three of sand or grit, as required by the London Building Act, 1894. The owner demolished and rebuilt, then brought action against the contractor to recover the whole cost of pulling down and rebuilding plus also the loss of ground rent. He won.

The contractor normally also had responsibility under the Building Act, 1894, Part VIII, with respect to party walls. Some years ago a building owner employed a contractor to pull down and rebuild his house. The contract contained the usual clause regarding responsibility for contiguous and adjoining premises. Owing to the negligence of the contractor's foreman while underpinning a party wall, it fell, and it was held the cost of rebuilding it, together with works contingent thereupon, should fall upon the contractor, involving a sum approximating some £5,000.

The contractor's liabilities under a contract were very extensive and included duties towards the public in general and particularly to those who by invitation might have rights or licence to perform duties in or about the building works. It also included a responsibility to comply with Building Statutes, Public Health Acts, and Local By-laws. It included duties to third persons and to employees, both under statute and at common law. In the time at his disposal it would be impossible to cover such a very wide field, but he ventured to hope the rough outline given might be of assistance to some, and if it conduced to a closer liaison between architects and contractors it must benefit the building owners, their masters.

Lectures: Victoria and Albert Museum.

A further series of informal lectures, illustrated by lantern slides, has been arranged to be given in the Lecture Theatre of the Museum, from 5.30 to 6.30 p.m., on Thursday evenings to March 3. The subjects of the first five lectures and the last have been chosen with special reference to the Exhibition of Flemish and Belgian Art, which is being held at the Royal Academy during January and February. Admission to these lectures will be free.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?—ED.

Colouring Sand-Cement.

SIR,—With reference to the colouring of sand-cement and roofing-tiles, I should be glad of some information as to the best colour to use and as to names of firms supplying it.

D. FIELD.

Worm-eaten Oak.

SIR,—Some Elizabethan oak panelling was purchased about twenty years ago and stored, awaiting an opportunity for re-use, which has now arrived. On examination, the panelling is found to be worm-eaten in places. Is there any means of telling if this is an old blemish and the worms are now dead, or if the trouble is still in progress? In the latter case, what is the best remedy before putting it alongside new oak? LEVER.

Responsibility for Faulty Design.

SIR,—What degree of responsibility does an architect or a consulting engineer automatically assume if he issues signed drawings and calculations of a structure in the event of that structure or any part of it collapsing through bad design?

Would a clause inserted in the conditions of engagement, delegating the responsibility to him or the contractor, for the safety and stability of the structure over a period of years, hold weight at law in this country? I understand that in France under the Code Civile, the architect or engineer and the contractor are jointly responsible for 10 years after the completion of the work. Is there any equivalent law in this country, or alternatively, has any precedent ever been given?

I recognise that in the event of loss of life occurring on such an occasion, a court of inquiry would endeavour to place the responsibility on the guilty person or persons, but I am anxious to know, should the verdict be taken against the architect or engineer, whether the employer has legal authority to demand monetary compensation in respect of the damaged structure or any part thereof?

RESPONSIBILITY.

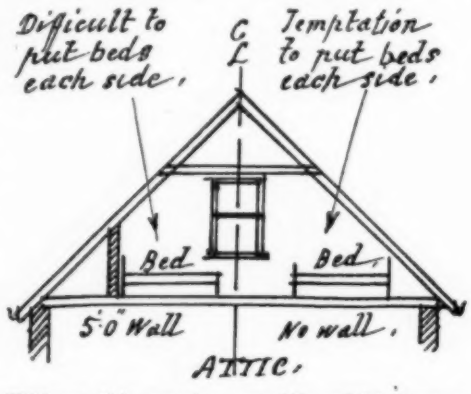
Ownership of Party Walls.

SIR,—I enclose a scale drawing with my query, whose wall is it, or is it a party wall? The wall is of 9 in. brick for greater part of a height of 45 ft., and thickens out to 14 in. at ground floor level (there being a basement) on the side of owner B. Owner B has three chimney breasts running up the full height, and culminating in one double and two single chimney stacks. All the flues in the single stacks are his, and extend to within 4½ in. of the back of the wall. In the double stack his two flues are back to back with one on A's side, but the latter's flue abuts against this wall, while B's flues penetrate and the mid-feather is on the outer face of wall on A's side.

The old building on B's side has been pulled down and rebuilt. Following on above query, and forming query No. 2, has B the right of tie into this wall? and No. 3, If in the rebuilding he has under-pinned this wall, can he recover the cost of so doing in the case of the wall being decided to be A's; or half ditto if it is a party wall? PARAPET.

By-laws Relating to Buildings and Streets.

SIR,—Your articles on By-laws bid fair to be most interesting. With regard to your remarks on the requirement of 5 ft. "walls" to attics which are used for human habitation, I am not at all sure the By-law is undesirable.



Without this proviso an attic might have a very large floor area with a poor average height. A large floor area to a sleeping apartment is a temptation to put a lot of beds in it, at a push. The 5 ft. "wall" proviso prevents, I suggest, overcrowding and ensures a fair average height to the attic, as will be seen from the accompanying diagram.

It is certainly unfortunate that no general Act permits By-laws to be made requiring windows for lighting purposes. So long as the window is not obstructed as a ventilating medium, it may be so arranged as to permit of a room being dark. What are the precise terms of special Acts permitting By-laws to be made as to windows for lighting? Is it not a fact that the powers given are for staircases only? Owing to the local authority having no discretion, the application of the By-laws is often more severe than it would be if the local authority had such. Take, for instance, the requirement that no "cross-wall" shall be less than 8½ in. thick. A one-story external wall may be supported by half-a-dozen 4 in. division walls and yet because it exceeds 30 ft. in length the local authority must insist on one of these walls being 8½ in. thick or a ghastly pier being provided—each equally unnecessary from the point of view of strength. SCRUTATOR.

Lino on Floorboards.

[REPLY TO MR. A. C. EDWARDS, JANUARY 7.]

SIR,—There is little doubt that should dry-rot set in at some future time under the present conditions—such conditions having been explained to the architect and allowed to remain without protest—a court of law would hold the architect liable. In spite of this, I am convinced that if dry, uninfected timber was used in the first place, on a perfect concrete base, with no through contact to the soil, there is not the slightest danger of dry-rot setting in, however the top surface may be sealed. Lack of ventilation in a confined space of warm, damp atmosphere makes a condition under which the germs of infection are encouraged, but the incipient rot must have been in the wood or the conditions of contamination present before actual rot will set in. In the case of a wood floor direct on the concrete, provided the latter is perfect, there is no way in which rot can be set up unless the original timber contained incipient dry-rot, which a good deal of post-war timber stocks undoubtedly possess. If your querist is an architect advising in the matter I should recommend him to cover himself with a letter stating that the lino covering remains at his client's risk, though it is his personal opinion that bad effects are not likely to arise if the lino is allowed to remain. SAFETY FIRST.

Carting Water.

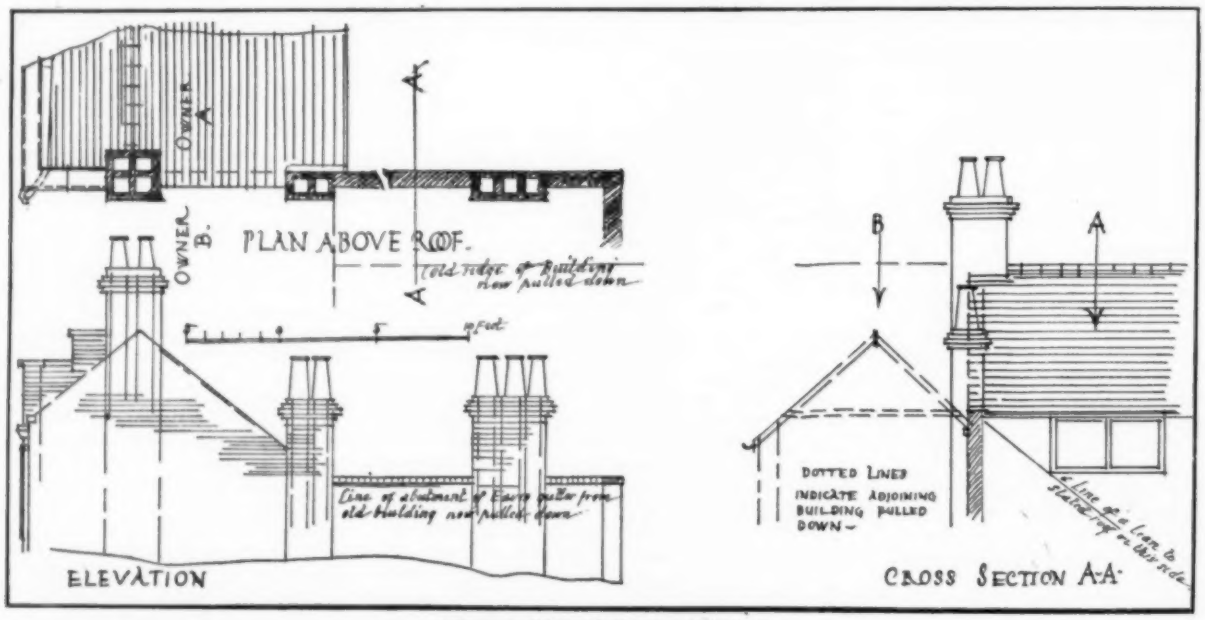
[REPLY TO "CONTRACTOR," JANUARY 7.]

SIR,—A properly worded contract specification should specifically state all those steps required of the contractor in the due and proper carrying out of his contract, such as the provision of plant, watching and lighting and water supply, and the contractor is undoubtedly entitled to an extra where any work is involved which is not covered in the contract documents. In this case it would appear that the building owners were aware of the need and intended to supply it from a separately let contract, so that your correspondent's claim would appear to be doubly founded. FAIRPLAY.

Lathing Deductions.

[REPLY TO "LATH," JANUARY 7.]

SIR,—Quantities are intended to be documents setting out the exact amount of materials used on a job, therefore a surveyor is quite entitled to deduct the width of partitions where the laths are butted against same and not running over the top into the next room. In practice the amount involved is so slight that it is generally considered not worth while the additional trouble involved on paper in extracting. In 1,000 ft. of partition the amount involved is no more than a sovereign. BROADWAY.



"Ownership of Party Walls."

THE BUILDING TRADE

BY-LAWS RELATING TO BUILDINGS AND STREETS.—II

In our introductory article we referred to a rumour that the Government proposed at some early date to consolidate the Public Health Acts, and therefore a fitting opportunity might present itself for an amendment of those sections which confer by-law-making powers, in accordance with the recommendations of the Committee on Building By-laws. The consolidation of the Public Health Acts extending from 1875 to 1925 would be a gigantic task in itself and, as a rule, when such an operation is undertaken, we advocate consolidation pure and simple with no amendment or alteration in the text of the sections thus brought together; for, unless such a method is adopted, decisions given under the old Acts become invalidated, and not only have practitioners and others to relearn the law, but litigation is encouraged. We live in an age of codification and amendment, and examples of the two methods are furnished by the recent treatment of two branches of the law. In the case of the statutes relating to Workmen's Compensation the method we advocate was adopted and although the various sections were regrouped with considerable gain in the clearness of the Statute as a whole, the text of each section was practically left unaltered so as to be easily recognisable by those versed in the subject and not to disturb the effect of cases decided upon the old Statutes where no repeal was effected.

On the other hand, an attempt has recently been made to simplify the law of real property, and the six bulky statutes passed with this object are familiar in name at least to many of our readers; but in this case the law has been drastically altered and amended, and we think few practitioners will be found to say that, at any rate in the first instance, the result has been a simplification of the law. We notice that in Sir Arthur Underhill's treatise on these statutes the heading to Chapter II is "Provisions of the Acts intended to simplify or improve the law." We do not know whether the word "intended" is used ironically, but it appears to justify our using the word "attempt."

If the Public Health Acts are consolidated, for the reasons given above, we hope that in the main the Government will not be too ambitious but will confine the operation to a simple codification, but there may be one exception in the case of those sections which confer by-law-making powers relating to buildings and streets. In a sense, the by-law-making sections, which are very few in number, may be said to stand by themselves, and this should make it easy to deal with them on a different basis from the rest of the statutes, as but small amendment of those sections would be necessary, and it is the by-laws made under them that are of importance.

The Committee on Building By-laws, in paragraph 17 of their Report, recommended with regard to statutes in the general law authorising by-laws to be made—(1) That they should be consolidated, the opportunity being taken to stop any obvious gaps, to add any powers that might suitably be exercised by all authorities, and generally to widen the scope of the by-law-making power, on the lines indicated in the Report. (2) That the powers so given should be conferred on all local authorities alike, it being left to the Local Government Board (now the Ministry of Health) under section 184 of the Public Health Act, 1875, to consider on the merits of each case, whether or not a particular by-law-making power should be exercised in a particular locality. (3) That further consideration should be given to a suggestion made before the Committee by a representative of the Association of Municipal Corporations that when the specific topics have been enumerated on which for the moment Parliament considers that by-laws may be made, a power should be conferred upon the Ministry to add other topics, by Provisional or other Order, as they can now do where a local Act gives by-law-making powers.

As the Report of this Committee is a document of great weight which must be consulted when any change in the law is contemplated we may remind our readers that it was a Departmental Committee appointed on April 30, 1914, shortly before the war broke out to consider "the control at present exercised in England and Wales over the erection of buildings and the construction of streets by means of by-laws and local regulations, and their effect upon building and development and to make recommendations." This Committee had held nine sittings when the war broke out and its proceedings were interrupted, but in October, 1917, they were resumed, the Committee having been reconstituted, and the Report was issued on November 13, 1918, and we published a brief notice of it in our issue of January 10, 1919.

The Report remained overshadowed by the war, and the recommendations of the Committee have consequently not received the attention they deserved, but it is an extremely valuable contribution on the subject of by-laws, requiring careful consideration when any legislation is introduced dealing with this question. The Committee throughout their Report lay great stress on the fact that by-laws are not the only method by which control is exercised over buildings and streets—a fact which they think is not sufficiently recognised.

By-laws under the Public Health Act are made by the local authorities under the statutes which authorise them, subject to confirmation by the Ministry of Health. Then there are statutory rules; these, unlike by-laws, are contained in Acts of Parliament, and have only to be enforced by the local authorities.

Besides the above there are regulations which can be made by local authorities without confirmation, and lastly there are discretionary powers. Obviously the only matter affected by consolidation of the law would be the statutes by which the making of by-laws are authorised, so we turn in the first place to these.

Statutory Powers for Making By-laws.

Before the passing of the Local Government Act, 1858, the statutes conferred upon local authorities powers of control, but the control exercised over the laying out of streets, and to some degree over the erection of buildings, was discretionary. By the above Act, for this discretionary control, control by by-law was substituted, and this policy has prevailed ever since, and the Committee saw no reason to revert to the old practice.

The present by-law-making sections referred to by the Committee are as follows: The principal by-law-making section is section 157 of the Public Health Act, 1875: "Every urban authority may make by-laws with respect to the following matters, that is to say—(1) with respect to the level, width, and construction of new streets and the provisions for the sewerage thereof; (2) with respect to the structure of walls, foundations, roofs, and chimneys of new buildings, for securing stability and the prevention of fires, and for the purposes of health; (3) with respect to the sufficiency of the space about buildings and with respect to the ventilation of buildings; (4) with respect to the drainage of buildings, to water closets, earth closets, privies, ashpits, and cesspools in connection with buildings, and to the closing of buildings or parts of buildings unfit for human habitation, and to the prohibition of their use for such habitation. . . ."

Section 23 of the Public Health Acts (Amendment) Act, 1890, which is only adoptive, provides in subsection (1): "Section 157 of the Public Health Act, 1875, shall be extended so as to empower every urban authority to make by-laws with respect to the following matters, that is to say—the keeping water closets supplied with sufficient water for flushing; the structure of floors, hearths, and staircases, and the height of rooms intended to be used for human habitation; the paving of yards and open spaces in connection with dwelling houses, and the provision in the laying out of new streets of secondary means of access where necessary for the removal of house refuse and other matters." Subsection (4) provides, "Every local authority may make by-laws to prevent buildings which have been erected in accordance with by-laws made under the Public Health Act, 1875, from being altered in such a way that if at first so constructed they would have contravened the by-laws."

The only other Act mentioned in this connection by the Committee was section 24 of the Public Health Acts (Amendment) Act, 1907, in a part of the Act which has to be applied by an Order of the Ministry of Health or of the Secretary of State which is as follows: "Section 157 of the Public Health Act, 1875, shall be extended so as to empower the local authority to make by-laws with respect to the height of chimneys of buildings and with respect to the height of buildings, and with respect to the structure of chimney shafts for the furnaces of steam engines, breweries, distilleries, or manufactories."

The Committee characterised the two sections from the Acts of 1890 and 1907 as examples of what they termed "haphazard legislation," leaving legislative gaps. The Report contains examples of what are termed these gaps; for instance, that whilst secondary access to buildings can be required in the laying out of a new street this does not apply to the erection of the buildings themselves, so that if a new street is laid out and plots left vacant, secondary means of access cannot be required to the buildings when erected; that although buildings once erected in accordance with by-laws cannot be altered in such a manner as to contravene those by-laws, there is no corresponding provision as regards new streets; that although by-laws can be made with respect to the structure of walls, foundations, roofs and chimneys of new buildings, by-laws cannot be made as to pillars supporting floors or roofs unless they are part of a wall, nor as to beams unless they are part of a wall, roof, or floor; that walls cannot be required to be soundproof, nor can unsightly materials outside be prohibited; that it is uncertain how far internal partition walls are considered "walls of a building" for the purpose of bungalows; that the composition of plaster cannot be regulated by by-law; that a sufficiency of space about buildings may be required "to secure a free circulation of air," but not for any other purpose. The height of rooms can be regulated, but not their cubical content or area; that although by-laws can be made to secure ventilation they cannot require lighting.

Some of the criticisms contained in the Report appear to us hypercritical; for instance, the Committee considered the introduction of chimney shafts in the Act of 1907 unnecessary, as they considered the structure of all chimneys covered by paragraph (2) of section 157 of the Act of 1875, but they assumed that the "chimney shafts" mentioned in the later Act must be the chimney of a building, an assumption that appears to us hardly well founded as it is possible to imagine a chimney shaft being a structure

standing alone. Again, it was urged that although flushing cisterns for water closets could be required and also the provision of water, no by-law can be made to secure water being brought into the cistern, but surely the words of the section "the keeping of water closets supplied with sufficient water for flushing" must cover this.

However this may be, it was upon the gaps above referred to, amongst others, that the Committee made the recommendation which we have referred to as contained in paragraph 17 of the Report, and following the above criticisms, they say in paragraph 12, "The result of this process has been a legislative patchwork under which the control by local authorities of building and development is restricted to particular topics or particular purposes, while there are many gaps and many sections on similar subjects which do not fit together. In our opinion, restrictions of this kind where they are really technical (such as that which limits building by-laws to certain portions or members of a building and by-laws as to walls to three specified purposes) should be removed, and some power should be given in the direction of enabling local authorities by means of by-laws to exercise control in all matters which are of such a nature as to require control in the public interest and to be suitably controlled by means of by-laws."

SOUTHERN RAILWAY EXTENSIONS

THE Southern Railway has planned a widespread programme of development and reconstruction for 1927. Work authorised and to be taken in hand in the coming year include (*a*) loop at Minster Junction at an estimated cost of £35,000; (*b*) improvements and alterations at Seaton Junction, Devon, to cost £46,000; (*c*) re-arrangements at Eastbourne Station, at an estimated cost of £30,000. New works proposed, for which plans will be submitted to the Railway's directors for approval during 1927, embrace (*a*) new loops and fly-overs at Lewisham Junction and Ladywell Station; (*b*) widening of the line between Kent House and Beckenham Stations; (*c*) widening of main line between Haywards Heath and Wivelsfield. The Southern Railway announce that it is hoped to place every contract with British firms.

Another part of the programme deals with the Southampton Docks extension scheme, by which it is proposed to increase very largely the accommodation available. Parliamentary powers for the first part of the scheme were obtained in 1924, and Parliament will be asked shortly to sanction further work which will be necessary before the full plans can be carried through. The scheme will cost some £13,000,000, and involve the reclamation of over 400 acres lying between the Royal Pier and Millbrook Point. The seaward boundary of the reclaimed area will consist of an embankment at its eastern and western ends and the central portion of a deep-water quay wall 7,400 ft. long. This will give accommodation for eight or ten vessels of the largest tonnage.

A deep-water approach channel will be dredged 600 ft. wide to connect the new berths with the existing deep-water channel opposite the Ocean Dock. Later it is proposed to construct a long jetty parallel to the new quay wall with berths on both sides. Powers are also being sought for the provision of two large graving docks at the western end of the reclaimed area.

The scheme provides for the equipment of the new quays with cargo and passenger sheds, up-to-date appliances for handling goods, warehouses, and roads connecting with the town and railways. The new railway lines will join the company's London-to-Bournemouth main line at Millbrook, and other lines will establish connections with the existing docks. The latter will involve the demolition of the present Toll House and other buildings at the entrance to the Royal Pier. It is proposed to replace these by a larger building more suited to the requirements of the Royal Pier traffic.

CONCRETE MACHINERY AND PLANT

SOME RECENT DEVELOPMENTS.

SCIENTIFIC knowledge of concrete and concrete making has proceeded apace during the past few years, and the design of concrete machinery has improved accordingly in order that the contractor may be in a position to gain in practice the benefit of experiments in the laboratory. Perhaps the most notable contribution towards better and cheaper concrete has been the investigations of Professor Duff Abrams into the effect of water content on the strength of concrete. The important fact brought to light is that, other factors being equal, the strength of concrete is governed by the amount of mixing water, and this is reflected in the fitting of automatic water tanks to most of the up-to-date mixers now on the market. Usually these operate by a syphon which may be set to deliver a predetermined amount of water per batch, thus eliminating the old haphazard method of tipping variable quantities into the drum from a pail or can.

The researches referred to prove that a certain definite amount of water will give maximum strength, and that either more or less will decrease strength. This is of great importance to the contractor, for by using the amount of water proved by tests to give maximum strength for a certain aggregate he can save a considerable amount of cement (the most expensive ingredient of concrete) compared with what would be necessary to give the same strength with the wet mixes so often seen. It is, however, necessary to utter a word of caution: the "cement-water ratio" theory is often interpreted to mean that the less water used the stronger the concrete. To an extent this is true, but there is a limit of stiffness in concrete beyond which the omission of a proportion of water weakens strength to a far greater extent than the addition of the same quantity. If the mix is too dry there may not even be sufficient water present to hydrate the cement, and this, we believe, is often the cause of unsatisfactory concrete. It is specially noticeable in the case of pre-cast concrete, where the necessity for removing the products from the moulds as soon as possible often results in the use of a mix so dry that the block or slab may be released immediately it has been cast. An automatic water tank is a necessity if the best results are to be obtained. The correct quantity of water per batch to give the required strength can first be ascertained by tests, and the tank then regulated to give that quantity and locked so that it can only be altered by the engineer in charge. If the mixer is not already fitted with an automatic tank, one can easily be fitted up with an ordinary cistern of the ball-cock type, and will well repay the trouble taken. In practice it will generally be found (except in the case of pre-cast concrete and foundations, &c.) that the quantity of water giving maximum strength will result in a concrete so stiff that it will not flow around reinforcement or into confined spaces; more water will then obviously have to be added and the proportion of cement increased to make up for the decreased strength following the excess of water, but even in such cases as this it is more economical to have the correct proportion of water to cement.

In their general design mixers have not varied much during the past few years. The revolving-drum type is still mostly used, although the advantages of the open-drum in which the materials are stirred by paddle arms or other means are being increasingly realised. It is a considerable advantage of this type of machine that the materials are in view the whole time they are being mixed, especially when dry mixes are used, as the thoroughness of the mix can be seen from the uniformity of its colour before discharge. Also, the complete emptying of the drum after each mix is more certain.

The latest American idea in concrete mixing is first to mix the cement and water into a slurry, and then add the slurry to the dry materials in the mixer. It is claimed that by this method a better mix is obtained, and that it eliminates the possibility of the cement "lumping," as it may do when water is added to the whole of the materials including the cement.

In this country rapid strides have been made in the use of distributing plant, which is now recognised as indispensable on a contract involving any considerable yardage of concrete. They have proved their value here as they did in the United States many years ago, and are now a standard item of contractor's plant. It may not be generally known that distributing plant may now be hired, so that the economies it makes possible may be taken advantage of without going to the heavy initial expense of purchasing the plant outright.

An item of plant that is becoming increasingly popular as it becomes better known is the steel form. Made in standardised units, with a few specials for corners, steel forms are now used for all types of structures from large dams to small cottages with equal success. These forms, which may also be hired, are practically indestructible, and will save their cost over and over again to anyone who does a fair amount of concreting. It is, however, essential to ensure that only the best types of steel forms, and those that have proved their worth, are used, as an inferior make of steel form will invariably result in a wall that is out of alignment; as a builder recently put it to us, "they are more trouble than they are worth." With the well-known standard steel forms on the market there is no danger whatever of a wall being out of plumb; we recently saw a thin wall (2½ in. thick) built to a height of 60 ft. with steel forms which, when tested, was not a quarter of an inch out from top to bottom. Shaped forms are supplied for circular structures, but there have recently been some interesting examples of the use of the ordinary straight form for curved surfaces. Circular structures with a diameter of 40 ft. or more may be built with straight wall forms without the fact being discernible to the eye, and quite presentable jobs can be made of smaller diameters, although probably at the expense of damaging the plates. A large number of circular structures of a diameter of 40 ft. and thereabouts have been built during the past year with the standard 2 ft. straight form.

Although it hardly comes under the heading of plant, a new process recently marketed in America for surface treating concrete may be mentioned. This takes the form of a "varnish," which is painted on the inside of the forms, and which acts on the cement with which it comes in contact, and prevents it from setting. It is claimed that the effect of the "varnish" penetrates to a fraction of an inch only, and has no effect whatever on the cement below that depth, and the result is that after the forms are stripped the cement may be brushed from the surface and the aggregate revealed.

In making pre-cast concrete, the power press has achieved a remarkable popularity, owing to the rapidity with which blocks and slabs may be produced. On the majority of these machines a "semi-dry" mix is used, and in their use the previous remarks as to the necessity for not having the mix too dry are of importance. The drier the mix the easier it is to handle the materials, the cleaner the work, and the greater the speed with which the pallets may be released, but if there is not sufficient water to hydrate the cement or to ensure that every particle of the materials is wetted, porous and weak blocks will inevitably result. The operator naturally prefers the dry mix, and it is therefore essential, either by the use of an automatic water supply or by careful supervision, to see that sufficient water is used. Another feature of some of these machines is that the specified pressure is given by a top plate descending a certain distance. If the mould box is not filled sufficiently high, the materials will not receive the full pressure, and it is thus advisable to mark the inside of the mould box to show the depth to which it is to be filled each time. If these precautions are taken, the pressure block and slab machine, either for hand or power operation, is a type from which maximum results may be obtained.

NEW IDEAS FOR SPEEDING-UP BUILDING

In the United States a variety of plant and devices are used, with more or less success, for the more rapid carrying out of building work. Very few of these methods are known at all in this country; fewer still are in use. Although the more useful of these devices are very widely used in the United States, so far only one or two of them are obtainable in this country through agents or otherwise. Some of these devices are illustrated and described herewith. Whether or not they will be economical to a contractor depends entirely on the volume of work done with them, as the more often they are used the less will be the proportion of their cost chargeable to each job. Most of them, however, are very strongly made, and a long life can be anticipated. Their chief claim to attention is the saving in

FIG. 1.

labour that can be effected with their use, while some of them also economise in materials.

The fixing of wood wall forms has received a great deal of attention, and there are on the American market a wide variety of devices invented with the object of dispensing with the many and expensive operations necessary to wire-up a wall form by the usual method. One of these is illustrated in Fig. 1. It consists of two wires welded at each end to a

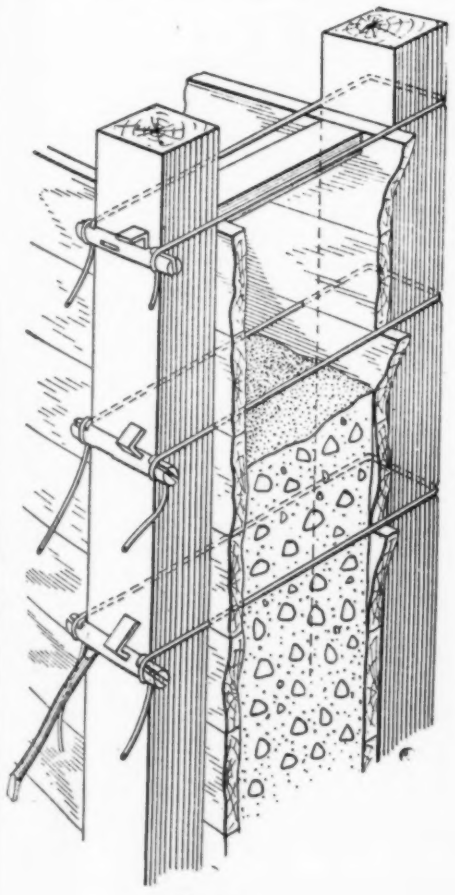


FIG. 2.

helix of wire that forms a nut for ordinary ¾-in. diameter screws. The wires, as will be seen, act as spreaders as well as ties. The wire remains in the wall after the screws are removed. They are made in sizes up to 30 in., and have a working strength of 5,000 lb.

Another method is shown in Fig. 2. The

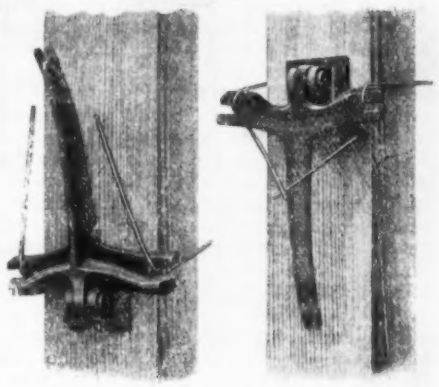


FIG. 3.—CLAMP OPEN. CLAMP CLOSED.

wire is passed around the uprights and through holes bored in the forms, and tightened by the clamps shown. These clamps are tightened by the turn of a handle, and are held in place when the wire is tight by the insertion of a piece of angle iron placed in a slot in the clamp and bearing against the post. Similar methods are adopted for wiring column forms, such as that shown in Fig. 3. The system needs no description; wires are passed around the column form and tightened by pushing down the handle of the clamp.

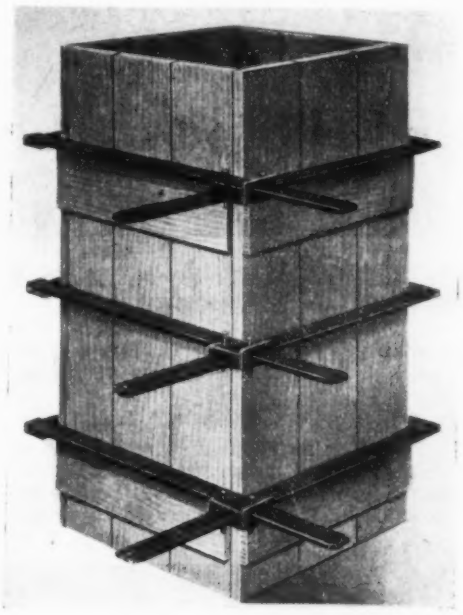


FIG. 4.

Another method of holding column forms in position is shown in Fig. 4. The steel arms are in two pairs and pivoted so that when they are applied the form is automatically squared. When it has been adjusted to the right size it is secured by dropping a nail or pin through the holes in the arms, and to release the clamp after the column is completed it is only necessary to knock out the nails or pins. An example of a clamp for a round column is shown in Fig. 5, and this could also be used for an octagonal column.

FIG. 5.

The steel band is 1½ in. wide. The band is adjusted to the size desired, passed around the column, and fastened by a wrench operating a ratchet in the steel frame.

Another operation that has received much attention with the object of reducing costs is the shoring of beams or other members during construction. The devices on the market for this purpose are practically all adjustable for any height of beam from floor level, and dispense with the operations, costly in material and labour, of cutting and wedging timber. One of these adjustable shores is shown in Fig. 6, and it is typical of them all. It consists of two vertical timbers with a concrete-filled pipe which slides between them. The shore is set upright beneath the beam,

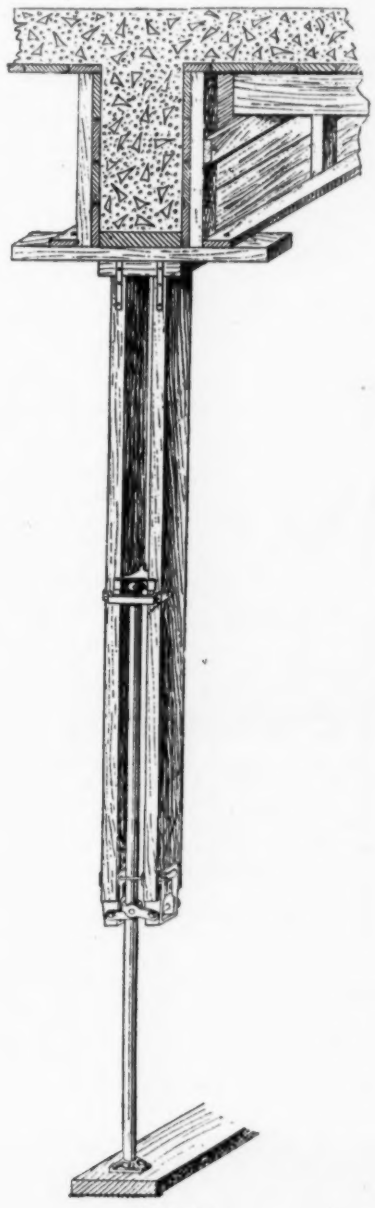


FIG. 6.

the timber portion raised to approximate height, and a final adjustment to correct height made with the aid of a jacking device slipped over the pipe. As the load is applied the shore is locked by heavy iron jaws automatically gripping the pipe. The shore illustrated can be handled by one man; it is adjustable up to 14 ft., and has a safe working load of 3,000 lb.

Dartmouth Housing Scheme.

It was stated at a recent Dartmouth Town Council meeting that the general foreman had reported that it was impossible to build the additional 22 houses on the Avery's Meadow site by direct labour, and consequently tenders had been asked for.

CAST STONE

ITS POSSIBILITIES AND ITS MANUFACTURE

ONLY a few years ago reconstructed stone was known as "artificial stone," and it suffered accordingly. No architect desired to see his design carried out in an "artificial" substance, whatever its merits in other respects. But the material has outlived this handicap of its early days; known as cast stone, it is being used to an increasing extent on important buildings throughout the world. When it is realised that cast stone is crushed natural stone bound together with Portland cement, and there is nothing artificial in its composition, it will be seen that this is the more correct description.

Reconstructed Portland stone is to be seen in Regent-street, Fleet-street, and other important London thoroughfares; it has just been used at the Natural History Museum, South Kensington, to match existing terra-cotta; at the new Croydon Air Station over 200,000 superficial feet of cast stone with a granite face are being used; all the dressings on the new Devonshire Court in Piccadilly are in cast Portland stone; sculpture by several eminent sculptors has been carried out in cast granite and other stones.

While cast stone claims attention on the ground of economy, it is also interesting architects on account of the textural effects made possible by its use. The time when the so-called "rock-face" concrete block was the best known example of cast stone has passed; there are, fortunately, very few of such blocks now being made, for the manufacturers have realised that the material has its own legitimate possibilities of surface treatment without attempting to imitate others. The rock-face concrete block and its fellows are generally made of ordinary gravel concrete moulded against an iron face-plate which repeats exactly the same impression on every square foot or so of a wall surface, and because it is ordinary concrete the surface has the dull grey colour inseparable from ordinary Portland cement.

Cast stone is a vastly different material so far as appearance and texture are concerned, although the principle of manufacture is the same. Its surface shows the material of which it is composed throughout. There is nothing artificial, nothing is hidden; rather, the true material is revealed. If crushed granite is used as aggregate, the surface resembles granite because it is in fact granite; if Portland stone is used, the cast stone resembles Portland stone; and so on throughout the whole range of natural stones.

In considering the possibilities of cast stone, it must be remembered that the dull grey colour and uniformity of ordinary concrete are brought about only because it is made in a mould, whether it be the shuttering for a wall or a mould for a small ornamental piece. If concrete be cut through it will be seen that the new faces thus revealed are totally different in appearance from the faces which were cast against the mould. The cut will be through stone and sand bound together with cement, and as there is generally from four to six times more stone-plus-sand than cement, the cut surface will consist of approximately 80 per cent. of stone. It is a characteristic of concrete making that a film of cement filters through to the faces cast against the mould, and completely hides the material of which 80 per cent. of the concrete consists. If this surface film of cement is removed, the material of which the concrete or cast stone is made is revealed, and this is the principle on which modern cast stone is made. The result is shown in Figs. 1, 2, 3, and 4, which illustrate cast stone made with different aggregates from which the film of cement has been removed and the surface treated. In Fig. 1 the film has been removed with an ordinary mason's chisel, leaving the same surface given to any stone when so tooled; Fig. 2 has been similarly tooled to give a ribbed surface, again with ordinary mason's chisels; Fig. 3 is made with marble chippings as aggregate and polished smooth in the same way as marble; in Fig. 4 the cement has been removed by scrubbing with acid.

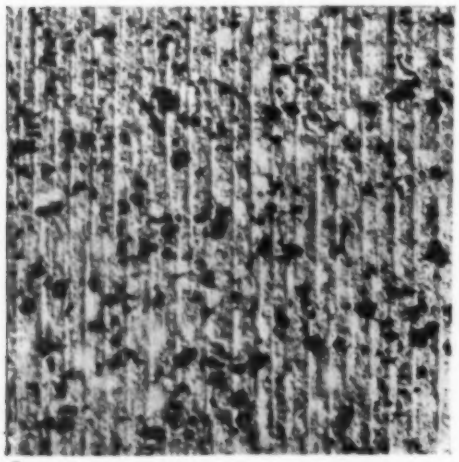


FIG. 1.—CAST GRANITE WITH TOOLED FACE.

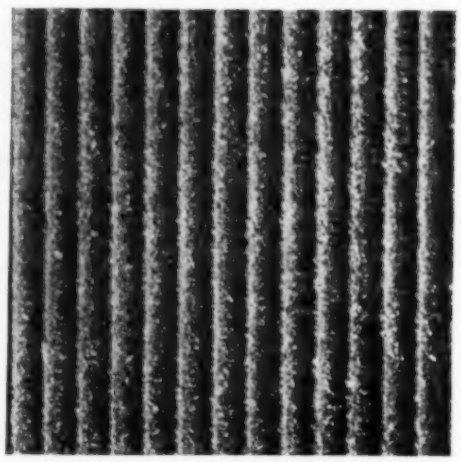


FIG. 2.—CAST PORTLAND STONE WITH TOOLED RIB SURFACE.

Materials.

It will be obvious that successful cast stone results primarily from the right selection of materials. The size of the aggregate depends upon the method to be used for treating the surface. If scrubbing is resorted to, the material may be of practically any size, as shown in Fig. 4. If the surface is to be tooled, however, it is essential that the aggregate should be crushed fine, as if it is too large it will not be easy to work. As a rule, anything that will not pass a ½ in. ring is unsuitable, as the hammering of the chisel will dislodge individual pieces of stone and leave unsightly holes, or the stones may split at wrong angles under the chisel. The use of a fine crushed stone is a necessity, but care must be taken that it does not contain any considerable proportion of very fine dust which would dust off from the surface on exposure. The necessity to use fine material at the same time results in cheapening costs, as it permits of stone chippings, practically a waste product of the quarry and stonemason's yard, being used.

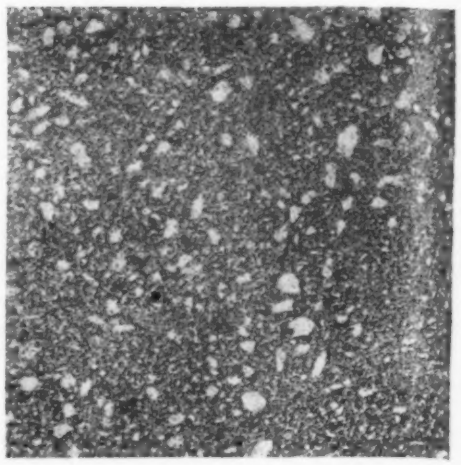


FIG. 3.—CAST MARBLE WITH SMOOTH STONED SURFACE.

Colour is, of course, a very important factor in good work, and the whole of the ingredients have to be considered in relation to the desired effect. Thus good cast Portland stone cannot be made with crushed Portland stone, red sand, and grey cement; to get the best result, it is necessary to use crushed Portland stone, with a proportion crushed to fine sand (or the whole crushed to the size of sand), and white Portland cement. No light-coloured stone can be made satisfactorily with ordinary Portland cement, the grey colour of which will detract from the finished appearance. Grey cement may be used more or less satisfactorily for darker stones, but generally speaking it is essential to use white Portland cement if the best results are to be obtained. If an analogy may be drawn between cast stone and paint, it may be said that as a white basis is essential for colour

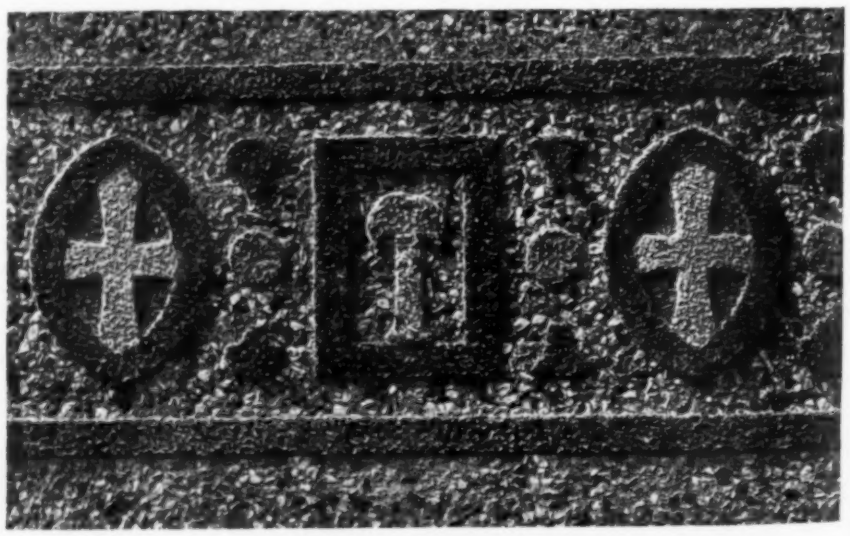


FIG. 4.—PART OF FRIEZE IN A CHURCH AT WASHINGTON.

[The whole of the interior of this Church is decorated with coloured concrete. Aggregate exposed by acid washing. The frieze is composed of river gravel for the background and crushed ceramics in different colours for the design.]

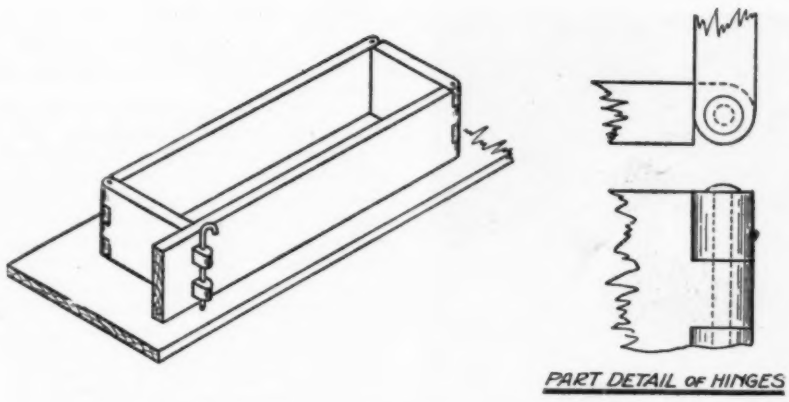


FIG. 5.—HINGED WOODEN MOULD FOR RECTANGULAR BLOCKS.

in paint, so is white cement essential as a colour basis for cast stone.

For certain stones the colour may be preserved by the use of cement coloured to the same shade as the stone. These coloured cements may be obtained from cement manufacturers in considerable variety, or the cement may be coloured at the works by the admixture of mineral oxides obtainable from firms who specialise in these colours. If the latter course be adopted, the colour should be obtained from reputable firms who specialise in the material, as if the proper mineral oxides are not used the concrete will be weakened.

According to the colour of the stone, so must the sand be selected if the stone is not used for fine aggregate as well as coarse. For instance, red sands are suitable for use with red stones; for light granite, white silica sand, which has the same sparkling appearance as granite, should be used; for Portland and other light-coloured stones, white or very light sands should be used. Certain sands by themselves will produce excellent effects, such as the silica sands, which closely resemble granite when made up as stone and tooled.

It has been stated that the material must be crushed fine in order to avoid pock-marking under the mason's chisel; for the same reason, it must be well graded and thoroughly consolidated to produce a dense and hard surface on which the mason can work. Usually 2½ parts of sand or crushed stone to 1 part of Portland cement will be suitable. The water content must not be stinted, for cast stone suitable for tooling cannot be made with a dry mix. In many works, water is added until the mix is no stiffer than cream, and the decreased strength which follows the use of so much mixing water is compensated for by the richness of the mix. When it is possible to use a drier mix, and at the same time run the concrete into every part of the mould and thoroughly compact it, less water may be used, but this is seldom possible in architectural cast stone manufacture owing to the detail of the mould and the sharp outlines and arrises called for.

Methods of Manufacture.

The stone may be cast in several types of moulds, such as sand, wood, plaster, glue, iron or steel, concrete, &c., the type of mould being selected according to the shape of the stone or the quantity to be made of the same shape. Whatever the material used for making the moulds the greatest care must be taken in their construction, as the result will depend entirely upon the quality of the moulds providing the selection of materials and other operations have been properly carried out. We recently saw a number of copings, 6 ft. long, made in wood moulds, with unsightly bulges due to the sides of the mould not being sufficiently strong, and giving at the middle when the concrete was rammed into them. It is better to waste a little material and have the moulds with a big reserve of strength than to skimp them and risk them becoming distorted or warping when in use.

Moulding cast stone in sand is practically identical with iron moulding. Moulding sand is rammed around a model, or pattern, which is then removed, and the space it occupied filled with concrete.

Iron moulds are most useful for repetition work on which they can be used many times over; the constant renewal of even wood moulds is an expensive matter, while iron moulds are practically indestructible. Iron moulds are made by iron founders specialising in the manufacture of light articles, and are produced from patterns made from a model or template.

Plaster and glue moulds are only used for special pieces, or when only one or two are required, and have a very short life. A model of the desired shape is first made in clay or plaster, and around this hair plaster is run in sections so that each will withdraw freely from the model when the plaster cast is completed, As these sections are built up a strip of greased paper is generally placed between each so that adjoining sections will not adhere to one another, and these are removed when the cast is complete. The cast is then taken down section by section and thoroughly shellaced on its inner face and on all adjoining edges to prevent the concrete adhering to it when it is poured; as a further precaution the inner face is generally rubbed over with a paraffin rag. The sections of the cast are then reassembled and held in position either by a surrounding jacket of plaster of Paris or by assembling them in a box, and the concrete poured into it through a hole in the top. Air holes are bored through the mould at suitable places to permit the air to escape from the interior as the concrete is poured, and these are stopped with putty when the concrete reaches their level and begins to ooze out.

The material generally used for moulds is wood, and where it can be used satisfactorily it is the easiest and cheapest material for the purpose. As with any material, an ample margin of strength must be allowed, and the mould must be so made that it will withdraw freely from the cast after it is made. For rectangular moulds some form of hinged sides and ends is the easiest to work; one method of hinging the corners is shown in Fig. 5, or the sides and ends may be fitted with ordinary butt hinges at the bottom so that they will fall downwards when the clamp at the top is removed. With either of these moulds a pallet is inserted in the bottom before the concrete is poured, and on this the casting is removed for curing.

Whenever shaped pieces are to be made it is advisable to make them in rectangular moulds whenever possible, the outline being obtained by the insertion of blocking-pieces in the mould. This is illustrated in Fig. 6, which shows how the outline of a cornice-like section is formed in a box with blocking pieces. The same principle may be applied to any other desired shape. It will be seen that in a mould such as this the casting may be released by withdrawing every part of the mould without rubbing or drawing over the concrete and the consequent risk of damage and broken arrises. This is particularly important when the castings are made of a fairly dry or semi-dry concrete, and it is desired to release the mould as soon as the casting is made. The speed with which moulds may be released is an important factor in making any kind of concrete product or cast stone when a large number are required, as most moulds are fairly expensive to buy or make, and the sooner they can be released the fewer will be required.

For circular objects wood moulds are made in strips tapered on each side so that they form a circle when fitted together. A typical method of making a wood mould for a round

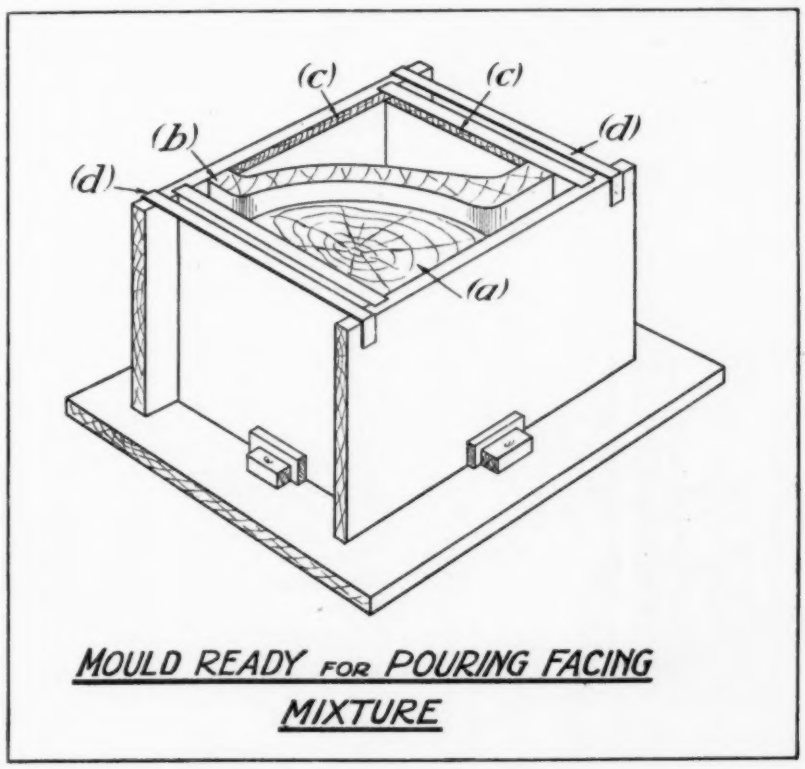


FIG. 6.—MOULD FOR FACED PIECES.

[For illustration a cornice-like section is used. (*d d*) are iron straps for holding the box together; (*a*) is a shaped block of wood to give the hollow; (*c c*) are pieces of wood to hold to dividing piece (*b*) in position. The facing is poured first, the dividing piece taken out, and the backing then poured.]

column is shown in Fig. 7, which needs no description. Making moulds for cast stone calls for considerable skill, and time and trouble spent on them is well repaid in the finished article. The essential point to be borne in mind is that every part of the mould must withdraw freely after the concrete has been poured, and this, especially when the piece has a considerable amount of undercut ornament, may often mean that the mould must be made up of twenty or thirty different pieces. If circular objects are to be made in two-piece moulds it is essential that the joint should be exactly central, as otherwise only one section will draw; it is generally better to make circular moulds in three sections.

Precautions must be taken to prevent wood moulds from warping and getting out of shape with use. They should always be soaked in water for at least twenty-four hours before use so that they will not absorb moisture from the concrete which is necessary for the hardening of the cement. To prevent the concrete from sticking to the moulds, the working faces should be coated with mould oil, or rubbed over with a paraffin rag. Each time they are used the moulds should be cleaned of any adhering concrete and oiled or rubbed with paraffin before they are used again.

If a wet mix is used the moulds can seldom be removed in less than three days if ordinary Portland cement is used; if rapid-hardening cement is used this period can be reduced to 24 or 36 hours, according to the weather conditions or method of curing. If the pieces are cured in the open or under cover without artificial heat they will be sufficiently hard for tooling in a further ten days, or fourteen days after casting, but this period depends upon weather conditions as concrete hardens quicker in warm, damp atmospheres than in cold or dry atmospheres.

If the surface cement is to be removed by scrubbing, this should be done as early as possible, and before the cement has thoroughly hardened. If the mix is semi-dry, it should be possible to carry out the scrubbing about twenty-four hours after casting, and the cement can then be easily removed with clean water. If it is necessary to leave the stone in the mould until the cement has set hard, clean water will not suffice and acid must be used. For this purpose a solution of one part of hydrochloric acid to three or four parts of water is used, taking care to remove all trace of the acid to prevent further penetration after the desired result has been achieved.

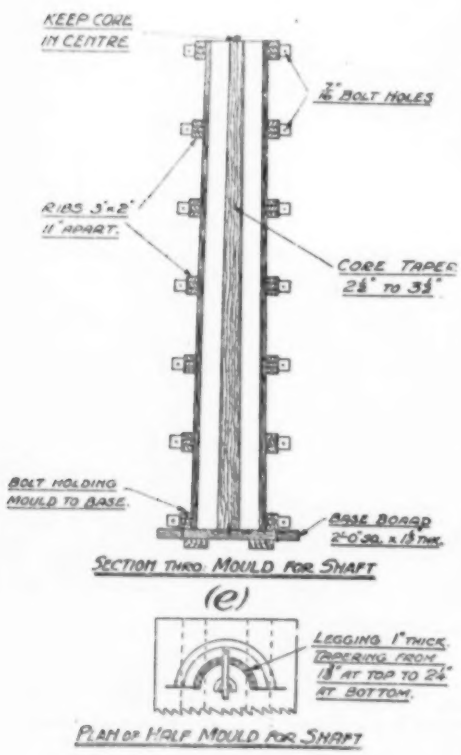

KEEP CORE IN CENTRE.
2" Ø BOLT HOLES
RIBS 3"×2" 11" APART.
CORE TAPER 2⅜" TO 3½"
BOLT HOLDING MOULD TO BASE.
BASE BOARD 2'-0"SQ. × 1⅛ THK.
SECTION THRO. MOULD FOR SHAFT
(e)
LEGGING 1" THICK TAPERING FROM 1⅜" AT TOP TO 2¼" AT BOTTOM.
PLAN OF HALF MOULD FOR SHAFT

FIG. 7.—MOULD FOR ROUND COLUMN.

FIG. 8.—LION'S HEAD IN CAST GRANITE.

In some cases, faced blocks only are used; that is, blocks of cast stone made of two different materials—a special aggregate for the face and a backing of ordinary concrete. In this case a strip of wood is inserted in the mould, as shown in Fig. 6; the facing mixture is placed and tamped first, the strip removed, and the backing applied and tamped so that the two mixes form one monolithic block. The same principle is adopted when a special face is applied to a concrete wall. A sheet of steel is placed vertically within the forms and held in position by distance-pieces. The two mixture—the facing and the backing—are then poured and the steel sheet raised so that the two concretes set together.

In these notes an outline of the process of making cast stone has been given. The process is not simple; after years spent on the work difficulties of colour and materials and methods of casting still baffle one; but it is full of interest and possibilities of improvement in mechanical processes and textural results. The manufacture and use of cast stone on an extensive scale started in America, and is rapidly increasing in this country as it becomes better known. It has been made long enough now to prove its durability; early troubles of surface crazing and discoloration have been eliminated so as to be practically negligible in the products of reputable firms. Not the least of the merits of the material is that it makes possible the use of stones which have hitherto been considered too soft for building purposes, although their colouring is good. Such stones, if crushed to sand and reconstructed with Portland cement, gain considerably in strength, and may be used with perfect safety while retaining exactly the same appearance.

The P.O. London Directory.

Messrs. Kelly's Directories, Ltd., of 186, Strand, W.C.2, have now published their Post Office London Directory for 1927, the 128th annual edition. The Directory is, as usual, simplicity itself, in the matter of arrangement and ease of reference, while there is a copious index. A street plan is included (scale 4 in. to the mile) and on the back of this is given a map of London and suburbs (scale 1 in. to the mile), extending in some directions to twenty miles from Charing Cross. The price of the Directory is 55s., and there is also a special edition of it, printed on thicker paper and bound in leather gilt, at the price of 70s.

COMPARISON OF PRICES OF BUILDING MATERIALS ON JANUARY 1st, 1926, WITH CURRENT PRICES.

Materials.	January 1, 1926. £ s. d.	January 1, 1927. £ s. d.	Rise. %	Fall. %
Bricks—				
Best Stocks	4 3 6	4 5 6	2.39	—
Flettons	2 13 3	2 13 3	—	—
Glazed	21 10 0	23 0 0	6.98	—
Thames Ballast	0 10 6	0 10 6	—	—
Thames Sand	0 14 6	0 14 6	—	—
Shingle (¼ in.)	0 12 9	0 12 9	—	—
Portland Cement	2 18 0	2 18 0	—	—
Ground Blue Lias Lime	2 4 6	2 13 6	20.22	—
Grey Stone Lime	2 11 9	3 0 9	17.39	—
Bath Stone	0 2 9½	0 2 9½	—	—
Portland Stone	0 4 4	0 4 4	—	—
Good Sound Building Timber—				
4 in. × 11 in.	28 0 0	28 0 0	—	—
3 in. × 11 in.	25 0 0	25 0 0	—	—
2 in. × 11 in.	25 0 0	25 0 0	—	—
3 in. × 9 in.	24 0 0	24 0 0	—	—
3 in. × 7 in.	20 0 0	20 0 0	—	—
3 in. × 4 in.	22 0 0	22 0 0	—	—
Slates—				
24 in. × 12 in.	37 12 6	37 12 6	—	—
22 in. × 12 in.	34 0 0	34 0 0	—	—
20 in. × 10 in.	25 12 6	25 12 6	—	—
16 in. × 10 in.	17 12 6	17 12 6	—	—
16 in. × 8 in.	13 15 0	13 15 0	—	—
R.S. Joists	12 10 0	12 10 0	—	—
Iron—				
Common Bars	13 0 0	13 0 0	—	—
Mild Steel Bars	10 0 0	10 0 0	—	—
Steel Bars	10 0 0	10 0 0	—	—
Cut Nails	19 0 0	19 0 0	—	—
Sheet Lead	46 10 0	39 10 0	—	15.05
Glass—				
15 oz. Sheet	0 0 3½	0 0 3½	12.00	—
21 oz. Sheet	0 0 4	0 0 4½	—	2.70
26 oz. Sheet	0 0 5	0 0 5	—	6.98
Raw Linseed Oil	0 3 6	0 3 1	—	11.90
Turpentine	0 5 10	0 5 0	—	14.29
Ground English White Lead	56 15 0	50 15 0	—	10.57
White Lead Paint	77 15 0	70 5 0	—	9.64
Red Lead	53 10 0	42 0 0	—	21.50

RATES OF WAGES IN THE BUILDING TRADE

Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.

	Masons	Brick-layers.	Carpenters Joiners	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Alfreton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Alnwick	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashford (Kent)	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Ashington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Aylesbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Aylsham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Banbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barnstaple	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Basingstoke	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Bath	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bedford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Berwick	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bexhill	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Birkenhead	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bradford-on-Avon	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Braintree	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Bridlington	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Brighton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bromsgrove	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bromyard	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Bungay	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burton-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Buxton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Cambridge	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Canterbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Carlisle	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chorley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cirencester	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/1
Clacton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cranbrook	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Cromer	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Deal	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Denbigh	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Devizes	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Dewsbury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dorchester	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Dorking	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Dovercourt	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Driffield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Droitwich	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
E. Glam.(Mon. Val)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ely	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½
Exmouth	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Fakenham	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Felixstowe	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1 1½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Frome	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Glossop	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Godalming	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Goole	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Gosport	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harpenden	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harwich	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hatfield	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hednesford	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Herne Bay	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hertford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hitchin	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Hoddesdon	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Holt	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hunstanton	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Huntingdon	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Isle of Wight	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Ipswich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Keighley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Kettering	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Kidderminster	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
King's Lynn	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leighton Buzzard	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Littlehampton	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Liverpool	1/10	1/10	1/10	1/11	1/10	1/10	1/9½	1/4½
Llandudno	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
London:								
12 m. radius	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/4½
12–15 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lowestoft	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Macclesfield	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Malvern	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Margate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Market Harborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Matlock	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Melton Constable	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Melton Mowbray	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newark	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Newbury	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-ur-Lyme	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
New Forest	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Newmarket	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Nuneaton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Paignton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Peterborough	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ramsgate	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Redcar	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Redditch	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Reigate	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Retford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Ripon	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rugby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Saffron Walden	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Helens	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Sawbridgeworth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Saxmundham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sevenoaks	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Sittingbourne	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stevenage	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stourbridge	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Stourport	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Stowmarket	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Stratford-on-Avon	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/1½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swaffham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Tamworth	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Thetford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Totnes	1/5	1/5	1/5	1/5	1/5	1/5	1/4½	1/1
Trowbridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/0½
Tunbridge Wells	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Uttoxeter	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wallsend	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Warminster	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Warwick	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Wells (Norfolk)	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Welwyn Gar. City	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Weston-sup.-Mare	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Weymouth	1/5	1/5	1/5	1/5	1/5	1/5	1/4	1/1
Whitby	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Winchester	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Wisbech	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Woodbridge	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Worksop	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Worthing	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Wrexham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Wroxham	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	1/3½	11½
Wymondham	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/0½
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

(For rates of wages in the Building Trade in Scotland, see page 104.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

JANUARY 17.—**Barnoldswick.**—PAINTING.—Painting and decorating the school premises, for the Bethesda Baptist Church. R. D. Baxter, 1, Park-street, Barnoldswick.

JANUARY 17.—**Brechin.**—HEATING.—Heating and ventilation required in the erection of the theatre, at Brechin, for the Cinema, Ltd. Directors Deposit £1 1s.

JANUARY 17.—**Bristol.**—BUILDINGS.—Annexe to Avonmouth sub-station; construction of two above-ground sub-stations at Filton Park and Hanham; extension of above-ground sub-station at Sea Mills, for the T.C. H. Faraday Proctor, Chief Engineer and General Manager, Electricity Offices, Colston-avenue. Deposit £2 2s.

JANUARY 17.—**Caersws.**—CONVERSION.—Of portions of present building into new casual wards, together with new sanitary offices, &c., at the Poor Law Institution, Caersws, for the Newtown and Llandidloes B.G. A. S. Hill, architect, Severn-square, Newtown. Deposit £1 1s.

JANUARY 17.—**Crompton.**—HOUSES.—Seventy-eight non-parlour houses at Twingates and Smallbrook housing sites, for the U.D.C. F. T. Jones, engineer and surveyor. Deposit £3 3s.

JANUARY 17.—**Edinburgh.**—PAINTING.—Hostels for women students, for the Association of Women Students at Craigmillar Park, Edinburgh. F. Wood, architect, 6A, George-street.

JANUARY 17.—**Hull.**—HOUSES.—Eighteen non-parlour two bedroom type houses on the East Hull housing site, for the T.C. City Architect.

JANUARY 17.—**Leeds.**—EXTENSION.—Of the Meanwood Working Men's Club, for the Committee. Carby Hall & Sons, architects, Prudential Buildings, Park-row, Leeds. Deposit £2 2s.

JANUARY 17.—**Maldon.**—CONVENIENCE.—Public convenience in Princes-street, for the T.C. Borough Engineer.

JANUARY 17.—**Maldon.**—HOUSES.—Fifty semi-detached houses in two types in Cross-road and Mundon-road, for the T.C. Borough Engineer.

JANUARY 17.—**Newcastle-upon-Tyne.**—REPAIRS.—Repair and maintenance of houses on the Walker Estate and the Pendower Estate, for the T.C. Housing Architect, 18, Cloth-market.

JANUARY 17.—**Oakengates.**—SHED.—Store shed at the sewage farm, Trench, Wellington, Salop, for the U.D.C. Surveyor, Council Chambers.

JANUARY 17.—**Settle.**—HOUSES.—Six houses at Four Lane-ends, Giggleswick, for the R.D.C. T. A. Foxcroft, surveyor.

JANUARY 17.—**Reigate.**—HOUSES.—For (*a*) 16 houses in Mid-street, Nutfield; (*b*) 14 houses in Meath Green, Horley; (*c*) 8 houses in Star-lane, Chipstead (*d*) 2 houses at Ironsbottom, Horley, for the R.D.C. W. J. Hatton, District Surveyor, 48, High-street. Deposit £3 3s.

JANUARY 17.—**Sheffield.**—PAINTING.—Cleansing and painting to engine room, fitters' shops, mess rooms, &c., at Blackburn Meadows power station, for the T.C. S. E. Fedden, General Manager and Engineer, Commercial-street. Deposit 10s. 6d.

JANUARY 17.—**Sheffield.**—SUB-STATION.—Erection of transformer sub-station on the Longley housing estate, for the T.C. S. E. Fedden, General Manager and Engineer, Commercial-street. Deposit 10s. 6d.

JANUARY 17.—**Shipley.**—HOUSES.—Sixty-eight houses on the Albert-road estate, for the U.D.C. H. Dawson, surveyor and architect. Deposit £2 2s.

JANUARY 17.—**Stoke-on-Trent.**—SUB-STATION.—Electrical transformer sub-station at the Infectious Diseases Hospital, for the T.C. E. Jones, architect, Albion-street, Hanley.

JANUARY 17.—**York.**—HOUSES.—Twelve brick houses (parlour type) on the Tang Hall estate, No. 2, and 38 semi-detached houses (parlour type) on the Glen-road estate, for the T.C. F. W. Spurr, City Engineer. Deposit £2 2s.

*JANUARY 18.—**Birmingham.**—PUBLIC LIBRARY.—Erection of in Washwood Heath-road, near Ward End Park, for the Public Libraries Committee of the City of Birmingham. The Chief Librarian, Reference Library, Ratcliffe-place, Birmingham. Deposit £2 2s.

JANUARY 18.—**Bootle.**—SHOPS.—Sixteen lock-up shops with sixteen flats above, on Bailey-drive, for the Corporation. Borough Engineer and Surveyor. Deposit £2 2s.

JANUARY 18.—**Bridlington.**—HEAD POST OFFICE.—Erection of Post Office, &c., at Bridlington, for the Commissioners of His Majesty's Office of Works Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Commissioners.)

JANUARY 18.—**Carreghofa.**—BUILDING.—Semi-permanent building for use for practical work and as a classroom, at the Carreghofa Council school, near Llanymynech, for the Montgomery E.C. Ll. Phillips, Director and Clerk, County Education Offices, Newtown. Deposit £1 1s.

JANUARY 18.—**Plymouth.**—REPAIRS.—To certain premises at 6, Henry-street, and cottage at the rear, for the C.B. R. J. Fittall, Town Clerk.

JANUARY 18.—**Scunthorpe and Frodingham.**—HOUSES.—Thirty-eight houses on the Crosby housing estate, for the U.D.C. W. Farrar, engineer and surveyor. Deposit £2.

JANUARY 18.—**Sheffield.**—HOUSES.—111 houses on the Longley estate, for the T.C. W. Geo. Davies, City Architect. Deposit £2.

JANUARY 18.—**Torquay.**—EXTENSION.—To the existing filter house, situated at the watershed, near Bennock, for the T.C. Water Engineer. Deposit £1 1s.

JANUARY 19.—**Dartmouth.**—HOUSES.—Two blocks of four houses on the site known as Avery's Meadow, for the T.C. Borough Engineer and Surveyor. Deposit £2 2s.

JANUARY 19.—**Elland.**—HOUSES.—Four blocks (two blocks of four each, one block of three, and one block of two), kitchen-parlour type of houses, on the Jepson-lane site, for the U.D.C. T. Exley Fisher, L.R.I.B.A., architect. Deposit £1 1s.

JANUARY 19.—**Liverpool.**—BUILDING.—New mess rooms, workshop, and lavatories, at Allerton Cemetery, for the T.C. City Engineer. Deposit £2 2s.

JANUARY 19.—**Plymouth.**—ALTERATIONS AND ADDITIONS.—To H.M. Customs Waterguard Offices, Plymouth Docks, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Commissioners.)

JANUARY 19.—**Swansea.**—GLAZING.—Proposed renewal of the patent glazing, &c., of the roofs at the Corporation Market, Oxford-street, for the Corporation. Ernest E. Morgan, A.R.I.B.A., Borough Architect, 3, Prospect place, Swansea. Deposit £1 1s.

JANUARY 19.—**Wakefield.**—FENCING.—Wrought-iron unclimbable fencing on the Hatfield Hall estate, for the Mental Hospital Committee. W. E. H. Burton, Architect and Engineer, West Riding Mental Hospitals Board Offices, Wakefield.

JANUARY 19.—**Wallingford.**—PAINTING.—For outside painting and redecorative work to the four houses at Aston Tirrold, Berks., for the R.D.C. P. C. A. Slade, clerk, 7, St. Martin's-street.

JANUARY 19.—**Whitley Upper.**—HOUSES.—Ten non-parlour type houses in Denby-lane, Grange Moor, for the U.D.C. Abbey & Hanson, architects, 11, Cloth Hall-street, Huddersfield.

JANUARY 20.—**Belfast.**—PARTITION.—For (1) Supply and erection of folding partition and minor alterations in connection with same at Euston-street (infants) P.E. School; (2) supply and erection of folding partition and minor alterations in connection with same at Jaffe Memorial P.E. School, for the C.B. Education Architect, Education Office, College-square.

JANUARY 20.—**Bristol.**—DECORATING.—Painting, repairs, &c., at the Guardians' Homes for Children, at 254, 256, 260 & 262, Charlton-road, Fishponds, for the B.G. T. S. Lamb, Clerk to the Guardians, St. Peter's Hospital.

JANUARY 20.—**Camelford.**—HOUSES.—At Tintagel six houses, St. Breward eight houses, Lanteglos six houses, Derabole eight houses, Boscastle two houses, for the R.D.C. A. R. Hansford, Building Surveyor. Deposit £2 2s.

JANUARY 20.—**Coatbridge.**—EXCHANGE.—Employment exchange at Coatbridge, for H.M.O.W. Architect, H.M. Office of Works, 122, George-street, Edinburgh. Deposit £1 1s.

JANUARY 20.—**Greenock.**—HOUSES.—Erection of 36 houses at Sharer's Land site, Port Glasgow-road, for the T.C. A. Nimmo, Town Clerk.

JANUARY 20.—**Liverpool.**—CONVENIENCE.—For females at Derby-square, for the T.C. City Engineer. Deposit £2 2s.

JANUARY 21.—**Birkenhead.**—HOUSES.—Seventy-eight parlour type houses, 181 non-parlour three bedrooms type houses, 294 non-parlour two bedrooms type houses, on land north side, Hoylake-road, Bidston, adjoining the Borough Boundary, for the C.B. C. Brownridge, M.Inst.C.E., Borough Engineer and Surveyor. Deposit £2 2s.

JANUARY 21.—**Ireland.**—BUILDING.—Of Carrow-kennedy Garda Siochana Station, co. Mayo; Keshcarrigan Garda Siochana Station, co. Leitrim; Mooncoin Garda Siochana Station, co. Kilkenny; Kilcrohane Garda Siochana Station, co. Cork; Knockloughra, enlargement of National School, co. Mayo, for the Commissioners of Public Works. T. Cassedy, Secretary, Public Offices, Dublin. Deposit £1 each.

JANUARY 21.—**Walsall.**—TELEPHONE EXCHANGE.—Erection of, at Bloxwick, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s. (Cheques payable to the Commissioners.)

JANUARY 21.—**Watford.**—HOUSES.—Erection of 124 on the Harebreaks housing estate extension, north-west of Gammons Farm, for the Corporation. W. W. Newman, A.M.I.C.E., F.S.I., Borough Engineer, on payment of a deposit cheque for £2 2s, payable to the Borough Treasurer, Municipal Offices, Watford.

JANUARY 22.—**Aberystwyth.**—BUILDING.—At the rear of Bridgend House, Llanbadarn-Fawr, for the R.D.C. O. Morgan, Clerk, 5, Chalybeate-street.

JANUARY 22.—**Bedford.**—FLATS.—Erection and completion of eight parlour-type houses and sixteen non-parlour type flats in Elstow-road, Kennedy-road, and Miller-road, for the Borough Council. Borough Engineer and Surveyor, Borough Surveyor's Office, Newnham House, Horne-lane, Bedford. Deposit £2 2s.

JANUARY 22.—**Eccles.**—FLOORS.—For (1) Construction of suspended reinforced concrete floors and roof; and (2) providing and fixing low-pressure hot-water boiler and heating system to the Electricity Department Mains Stores, King-street, for the T.C. T. Elce, Borough Engineer and Surveyor.

JANUARY 22.—**Farnham.**—TANK.—Construction of a bored and lined well about 200 ft. deep, and for the provision, fixing, and working a temporary air lift pump, also for the construction of a concrete settling tank with the necessary cast-iron pipe connections and mains, at the Waterworks, for the U.D.C. John Taylor & Sons, engineers, Caxton House, Westminster, S.W.1. Deposit £5.

JANUARY 22.—**Halifax.**—CONVERSIONS.—Plumbing work required in connection with the conversion of 83 closets at various addresses within the borough, for the C.B. Borough Engineer, Crossley-street.

JANUARY 22.—**Kingston-on-Thames.**—HOSPITAL BUILDINGS.—Erection of new ward block and other works at the Mogden Hospital, for the Borough of Richmond (Surrey) and the Heston and Isleworth Urban District Joint Hospital Committee. S. C. T. Littlewood, clerk, Clerk's Office, 14, Church-street, Kingston-on-Thames. Deposit £5.

JANUARY 22.—**Long Ashton.**—HOUSES.—Two houses at Cleeve, four houses at North Weston, and 12 houses at Nailsea, for the R.D.C. M. Froud, architect, St. Stephen's Chambers, Baldwin-street, Bristol. Deposit £1 1s.

JANUARY 22.—**Marple.**—HOUSES.—Twenty-six houses on the Brindley Farm housing site, for the U.D.C. D. J. Diver, surveyor. Deposit £1 1s.

JANUARY 22.—**Methley.**—HOUSES.—Thirty-four semi-parlour type houses, to be built in blocks of two, on a site in the Micklefield area, for the U.D.C. T. Thompson, architect, Red House.

JANUARY 22.—**Salford.**—BUILDING.—For (*a*) Glazed brick patent partitions; (*b*) patent roof glazing; (*c*) roof light gearing; (*d*) sanitary fittings and special slipper bath fittings; (*e*) circular metal roof lights; (*f*) storage tank; (*g*) electric light installation; (*h*) wall tiling, at the wash-house and slipper baths, Hodge-lane, for the C.B. C. Swain, architect, 12, Exchange-street, Manchester.

JANUARY 24.—**Aldershot.**—JOINERY WORK.—Manufacture and delivery of doors, door frames, window sashes and frames, and other joinery required in connection with the erection of a further 124 houses by direct labour, for the Corporation. Borough Surveyor, Municipal Buildings, Aldershot.

JANUARY 24.—**Belfast.**—HOUSE.—Club house on Antrim-road, Belfast. T. R. Eagar, architect, 142, Royal-avenue. Deposit £2 2s.

JANUARY 24.—**Birkenhead.**—OFFICES.—New waterworks offices on land adjacent to the waterworks depot, Borough-road, Birkenhead, for the C.B. R. F. Baker, Water Engineer, 52, Balls-road. Deposit £2 2s.

JANUARY 24.—**Cambridge.**—CONVENIENCES.—Construction of two public conveniences containing in all 27 fittings, one site being at the junction of Cherry-hinton-road with Hills-road, and the other at the junction of Newnham-road with the Fen Causeway, for the T.C. G. W. Teasdale, Borough Engineer and Surveyor. Deposit £2 2s.

JANUARY 24.—**Glasgow.**—ADDITIONS.—Painter work required in connection with the proposed additions to, and alterations on, Bellefield Sanatorium, for the T.C. J. Lindsay, Town Clerk. Deposit £2 2s.

JANUARY 24.—**Huddersfield.**—ADDITIONS.—Alterations and additions to the underground lavatories, Market-place, for the C.B. W. Jaggar, Borough Engineer and Surveyor, 1, Peel-street.

JANUARY 24.—**Little Hulton.**—HOUSES.—Forty-six non-parlour type houses off Worsley-road, for the U.D.C. J. H. Heyes, clerk.

JANUARY 24.—**Llanelly.**—HOUSES.—Twenty-two parlour type houses on the Llanerch site, for the T.C. Borough Surveyor. Deposit £2.

JANUARY 24.—**Mansfield Woodhouse.**—HOUSES.—For (*a*) 30 houses on a site adjoining Clipstone-road, Forest Town, and (*b*) the construction of the necessary roads and sewers, for the U.D.C. L. Walker, surveyor. Deposit £2 2s.

JANUARY 24.—**Pontefract.**—HOUSES.—170 houses on the Baghill site, for the T.C. W. H. Newton, Municipal Offices. Deposit £5.

JANUARY 24.—**Sedgley.**—HOUSES.—Ten non-parlour type houses, on land situate at Eve-lane, Upper Gornal, for the U.D.C. Estate Manager, The Walk. Deposit £2 2s.

JANUARY 24.—**Steyning West.**—HOUSES.—Ashurst, 2; Beeding, 10; Lancing, 24; Shermanbury, 2; Sompting, 6; Steyning, 10; Woodmancote, 2, for the R.D.C. C. H. Wright, architect and surveyor, Bank Lodge, Western-road, Shoreham-by-Sea. Deposit £2 2s.

JANUARY 24.—**West Derby.**—VARIOUS.—Proposed roadwork, garden paths, and retaining walls, Cleaver Sanatorium, Heswall, for the B.G. E. B. Bailey, L.R.I.B.A., 9, Cook-street, Liverpool.

JANUARY 25.—**Batley.**—HOUSES.—Thirty-six on the housing estate on Bradford-road, W., Batley, for the T.C. H. L. Hall, Borough Engineer and Surveyor, Brunswick-street.

JANUARY 25.—**Bolsover.**—HOUSES.—Thirty houses at Whaley Thorns, for the U.D.C. Sydney Hotes, surveyor. Deposit £2 2s.

JANUARY 25.—**Edinburgh.**—BUILDING.—For (1) mason and brick, (2) carpenter and joiner, (3) plumber, (4) plaster, reinforced concrete, and terrazzo, (5) slater and harling, (6) painter, (7) glazier, (8) asphalter, (9) steel and smith, and (10) electrical, at the Male Sanatorium, Bangour Mental Hospital, for the District Board of Control. James D. Gibson, surveyor, 60, Frederick-street, Edinburgh.

JANUARY 25.—**Ireland.**—BUILDING.—Of Kilcurley National School, co. Louth; Lyranes National School, co. Kerry; Boheshill National School, co. Kerry; Cloonark (restoration of ex-R.I.C. Barracks), Garda Siochana, co. Roscommon, for the Commissioners of Public Works. T. Cassedy, Secretary, Office of Public Works, Baile Atha Cliath, Dublin. Deposit £1 each.

JANUARY 25.—**Willesden.**—CONVENIENCE.—Public convenience at Willows Yard, Harlesden-road, Harlesden, N.W.10, for the U.D.C. F. Wilkinson, Town Hall, Dyne-road, Kilburn, N.W.6.

JANUARY 26.—**Bexley.**—HOUSES.—Sixteen houses in Lovel-avenue, Welling, for the U.D.C. W. T. Howse, surveyor. Deposit £1 1s.

JANUARY 26.—**Clevedon.** — HOUSES. — Fourteen houses on Kenn-road housing site, for the U.D.C. G. W. Knowles, surveyor, "Verwood," Madeira-road.

JANUARY 26.—**Glasgow.**—SHELTER.—Shelter, boat-house, and tea-room, &c., at Hogganfield Loch, for the T.C. Director of Parks, City Chambers, 249, George-street.

✱JANUARY 26.—**Goole.**—HOUSES.—Erection of eight "B" type houses on the Jacksonville and Pasture-road sites for the U.D.C. J. H. Castle, engineer and surveyor, Council Offices, Goole. Deposit £2 2s.

JANUARY 26. — **Hemel Hempsted.** — HOUSES.—Erection of 10, in two blocks of four, and one pair, in Highfield-lane, Hemel Hempsted, for the Corporation. A. Murray-Smith, A.M.Inst.C.E., Borough Surveyor, Market-square, Hemel Hempsted.

JANUARY 26.—**Herne Bay.**—CLEANING AND PAINTING WORKS.—At St. Annes' Home, Herne Bay, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

JANUARY 26.—**London.**—ALTERATIONS.—Isolation accommodation at Brook Hospital, Shooters' Hill, S.E.18, for the Metropolitan Asylums Board. Office of the Board, Victoria Embankment, E.C.4. Deposit £1.

JANUARY 26.—**Oakham.**—COTTAGES.—Non-parlour type cottages on the Cold Overton-road housing site, for the U.D.C. A. Baker, architect, Church-street. Deposit £1 1s.

✱JANUARY 27.—**Stafford.**—HOUSES.—Erection of 58 of the parlour and non-parlour type, on the Tithe Barn housing estate, for the Corporation. W. Plant, A.M.I.C.E., Borough Engineer, Borough Hall, Stafford. Deposit £1 1s.

JANUARY 27.—**Thornaby-on-Tees.**—HOUSES.—Sixty-nine non-parlour type houses, in pairs, including drainage, paving and fencing complete; construction of sewers, in open cutting, comprising approximately 700 ft. 9 in. diameter and 500 ft. 6 in. diameter, together with all manholes, specials and appurtenant works; construction of roads, comprising kerbing, channelling, formation of new footways and carriageways in tarmacadam, including foundations, and cul-de-sac carriageway in reinforced concrete, for the T.C. G. H. Connor, Borough Engineer, Surveyor, and Housing Architect. Deposit £6 6s.

JANUARY 27.—**Tottenham.**—HOUSE. — Superintendent's house and offices at Tottenham Cemetery, for the Tottenham and Wood Green Burial Board. J. C. S. Mummery, A.R.I.B.A., of 34, Bloomsbury-square, W.C.1.

JANUARY 28.—**Castle Donington.**—HOUSES.—Erection of eight houses in two contracts as follows: Contract No. 1, four semi-detached houses at Tonge. Contract No. 2, four semi-detached houses at Breedon for the R.D.C. Arthur Eaton & Son, F.R.I.B.A., 6, The Strand, Derby.

JANUARY 28.—**Rotherham.**—HOUSES.—Two hundred houses at Meadowbank-road, for the C.B. V. Turner, Borough Engineer. Deposit £2 2s.

JANUARY 29.—**Crediton.**—HOUSES.—Sixteen houses at Newton St. Cyres, near Crediton, for the R.D.C. E. O. Harding, architect and surveyor, 34, Prospect Park, Exeter.

JANUARY 29.—**Eccles.** — HOUSES. — Seventy-eight non-parlour houses in pairs and blocks of four on the Gaskell-road estate, for the T.C. T. Elce, Borough Engineer and Surveyor. Deposit £2 2s.

JANUARY 29.—**Hailsham.**—HOUSES.—Twenty-four scullery type houses in pairs, 16 scullery type houses in blocks of four, 14 parlour type houses in pairs, on the Cragg Hill site, for the U.D.C. Jas. E. Aldersley, Housing Architect. Deposit £1.

JANUARY 31. — **Oldham.** — GENERAL BUILDING WORKS.—Erection, completion and maintenance of the superstructure and machine foundations upon a reinforced concrete foundation raft already prepared, at their new generating station, Slacks Valley, Chadderton, for the Electricity Committee. F. L. Ogden, Borough Electrical Engineer, Greenhill Offices, Oldham. Deposit £1 1s

JANUARY 31.—**Portsmouth.**—HOSPITAL BUILDINGS, &c.—Erection of new block for 62 female patients and the provision of a new 9 in. sewer, for the Committee of Visitors of the City of Portsmouth Mental Hospital Milton. Committee's Architect, E. H. Harvey, Guildg hall-square, Portsmouth. Deposit £3 3s.

JANUARY 31.—**Tanfield.**—HOUSES.—For 14 semi-detached type B3 houses; 30 semi-detached type B2 houses; 22 semi-detached type A2 houses, for the U.D.C. J. R. Heslop, architect. Deposit £2 2s.

FEBRUARY 1.—**Annaclone.**—SCHOOL.—New public elementary school at Ballynanny, Annaclone, co. Down. J. Moorhead, Anaghlone Manse, Banbridge.

FEBRUARY 1.—**Castlebar.**—RESTORATION.—Partial restoration of Castlebar military barracks, for the Commissioners of Public Works. T. Cassedy, Secretary, Office of Public Works, Baile Atha Cliath, Dublin. Deposit £1.

FEBRUARY 1.—**Dundalk.**—HOUSES, &c.—For laying out streets and forming footpaths, laying sewers and water mains, filling and levelling of sites, building concrete retaining wall, fencing, &c., and the erection of 39 concrete houses on two sites, namely, 20 in South Ward and 19 in Middle Ward, for the U.D.C. M. Sellars, Town Surveyor. Deposit £5.

✱FEBRUARY 1. — **Gateshead.** — TELEPHONE EXCHANGE.—Erection of at Gateshead, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s. (cheques payable to the Commissioners).

FEBRUARY 1.—**Greasbro'.**—Twenty-eight houses at Highfield-road, for the U.D.C. J. Totty, architect, Moorgate-street, Rotherham. Deposit £2.

✱FEBRUARY 1.—**Leicester.**—COLLEGE BUILDINGS.—Erection of the new wing to the Colleges of Art and Technology, for the City of Leicester E.C. F. P. Armitage, Director of Education, Town Hall, Leicester. Deposit £2 2s.

✱FEBRUARY 2.—**Dorset.**—TELEPHONE EXCHANGE.—Erection of at Parkstone, Dorset, for the Commissioners of His Majesty's Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £1 1s. (cheques payable to the Commissioners).

✱FEBRUARY 2.—**Poplar.**—BRIDGE AND TOWPATH.—Reconstruction and widening of Bow Common-lane Bridge, the widening of the Limehouse Cut beneath, together with important subsidiary works, for the Borough Council. Harley Heckford, Borough Engineer, Council Offices, High-street, Poplar. Deposit £3 3s.

FEBRUARY 4.—**Wembley, Middlesex.**—HOSPITAL.—Erection of a hospital in Wembley, comprising accommodation and appurtenant offices for 20 beds. Herbert Kenchington, A.R.I.B.A., Chartered Architect, 44, Bedford-row, London, W.C.1. Deposit £2 2s.

FEBRUARY 7.—**Crowmarsh.**—HOUSES.—Pair of parlour-type houses at North Stoke, Oxon, for the R.D.C. H. B. Barnsley, architect, Knightsbridge Farm, Shirburn, Watlington, near Wallingford. Deposit £3 3s.

FEBRUARY 8.—**Stoke and Wolstanton.**—HEATING.—Alterations and additions to the central-heating and hot-water services at the London-road institution, near Newcastle, Staffordshire, for the B.G. Edwards & Shaw, consulting engineers, Birmingham. Deposit £5 5s.

FEBRUARY 9.—**Stoke-on-Trent.**—STEELWORK.—Supply, delivery and erection of steam and water piping, valves, &c., and construction steelwork, platforms crane gantries, &c., for Central Power House extensions, for the T.C. City Electrical Engineers, St. George's-chambers, Kingsway, Stoke-on-Trent. Deposit £2.

FEBRUARY 9. — **Stretford.** — SCHOOL. — Secondary school for boys at Stretford, near Manchester, for the Lancashire E.C. County Architect, 16, Ribblesdale-place, Preston. Deposit £2.

FEBRUARY 14.—**Great Crosby.**—HOUSES.—Fifty houses off Endbutt-lane, for the U.D.C. J. A. Wright, surveyor. Deposit £1 1s.

✱FEBRUARY 16.—**Barnet (Herts.).**—CASUAL WARDS.—Rebuilding of the casual wards and other works at the Institution, West End-lane, Barnet, for the Guardians of the Barnet Union. Trant, Brown & Brightiff, A.R.I.B.A., architects, 332, High-road, Kilburn, N.W. 6. Deposit £5 5s.

✱FEBRUARY 16.—**Dudley.**—BATHS.—Erection of new baths to be constructed in ferro-concrete for the County Borough Council. F. H. Gibbons, M.Inst.M. and Cy.E., Borough Engineer, Town Hall, Dudley. Deposit £3 3s.

NO DATE.—**Dolgelley.**—BUILDING.—Building and heating chamber and carrying out other work at the school, for the Dolgelley Grammar School Governors. A. M. Howard Jones, L.R.I.B.A., chartered architect, County Council Offices, Dolgelley.

NO DATE.—**Eye.**—DEMOLITION.—Of remaining portions of the old workhouse, for the T.C. H. Hooper & Garrard, AA.R.I.B.A., 13, Queen-street, Ipswich.

NO DATE.—**Govan.**—HOME.—Works at Nurses' Home at the Southern General Hospital, for the Combination P.C. J. Taylor, architect, 166, Buchanan-street, Glasgow.

NO DATE.—**Hitchin.**—COTTAGES.—Twenty-six cottages on a site in Park-road, Knebworth, for the R.D.C. A. E. Passingham, clerk, 5, Bancroft.

NO DATE.—**Ipswich.**—DECORATING.—Internal redecorating of the Public Health Offices, Elm-street, for the C.B. E. McLauchlan, Borough Surveyor and Water Engineer.

NO DATE.—**Topsham.** —HOUSE.—House at Topsham, for D. May. E. H. Harbottle & Sons, architects, County Chambers, Exeter.

MATERIALS, etc.

JANUARY 17. — **Caterham.** — MATERIALS. — Road materials, and for works of tarspraying, for the U.D.C. D. E. Biart, clerk.

JANUARY 17.—**Chorley.**—MATERIALS.—Tarred and dry granite, tarred and dry slag, tarred and dry limestone, earthenware pipes, concrete flags and kerbs, pitch, creosote oil, tar and tar compounds, grit and granite kerbs and setts, pitching and broken rubble, for the R.D.C. W. Cotterill, Surveyor.

JANUARY 17.—**Devon (Northern Division).**—MATERIALS.—Tarred macadam, gravel and sand, refined tar, bituminous compounds, for the C.C. R. M. Stone, County Surveyor (Northern Division), 9A, High-street, Barnstaple.

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JANUARY 17. — **Staines.** — MATERIALS. — Road materials (including tarmacadam, macadam, chippings), &c., gravel, washed shingle, sand and hardcore, tar and tar compounds, for the R.D.C. D. C. Fidler, engineer and surveyor, London-road, Ashford.

JANUARY 17.—**Wareham and Purbeck.**—MATERIALS.—(1) Broken limestone, (2) fine and coarse gravel, for the R.D.C. A. Hunt, engineer and surveyor.

JANUARY 18.—**Plymouth.**—RAILINGS.—470 yards of wrot-iron railings, 5 ft. 6 in. high. J. Wibberley, Borough Engineer and Surveyor.

JANUARY 19.—**Chelsea.**—ARTICLES.—Supply and execution of various articles and works, the contract period being from April 1 next to March 31, 1928, for the Council of the Metropolitan Borough of Chelsea. Contracts 1, 3 and 4, Town Clerk; other contracts, Borough Surveyor, Town Hall, King's-road, Chelsea, S.W.3.

JANUARY 19.—**Isle of Wight.**—MATERIALS.—Granite and granite chippings, bitumen and bitumen compounds, refined tar, surface dressing, approximately 800,000 yds. super., for the C.C. A. J. A. Harris, Highways Surveyor, County Hall, Newport, I.W.

JANUARY 19.—**London.**—MATERIALS.—Bricks, lime and fireclay, cast-iron work,, colours, varnishes painters' brushes, &c., drainage materials, Portland cement, timber, tools, implements and ironmongery, asphalte paving, ballast, sand and shingle, &c., paving materials, for the Stepney B.C. B. J. Belsher, F.R.I.B.A., Borough Engineer and Surveyor, Municipal Buildings, Raine-street, Old Gravel-lane, E.1. Deposit £1.

JANUARY 19.—**Southport.**—PIPES.—About 337 tons of cast-iron spigot and socket pipes, 12 in. in diameter, or alternatively an equivalent length of steel pipes lined internally and protected externally, for the Southport, Birkdale, and West Lancashire Water Board. C. Burton Ede, Engineer and Manager, 14, Portland-street, Southport.

JANUARY 20.—**Easthampstead.**—MATERIALS.—Tarmacadam, macadam, chippings, gravel, flints, hardcore, &c.; surface tarring with refined tar or bituminous compounds, for the R.D.C. Surveyor, Council Offices, Bracknell.

JANUARY 22.—**Driffield.**—MATERIALS.—Whinstone, tarred slag, dry slag, and gravel, for the R.D.C. T. Casson Beaumont, surveyor.

JANUARY 22.—**Essex.**—MATERIALS.—Stoneware pipes, distilled tar, broken granite, tarred slag, for the C.C. Wm. H. Morgan, Chartered Civil Engineer, County Surveyor, Old Court, Chelmsford.

JANUARY 22.—**London.**—MATERIALS.—Disinfectants, native or rock mastic asphalt, gravel, hoggin and loam, wood paving blocks, lime and cement, timber, prepared tar, creosote, pitch and bitumen, fine crushed and uncrushed Thames and other shingle and granite chippings, Thames or other ballast, sand and shingle, tarred macadam, natural gritstone and artificial paving flags, iron, steel, &c., surface dressing works, for the Paddington B.C. W. F. Abbis, Town Clerk, Town Hall, Paddington, W.2.

JANUARY 22.—**Sleaford.**—GRANITE.—Granite, slag, gravel, and tar or bitumen, for the R.D.C. E. H. Godson, clerk.

JANUARY 22.—**Worthing.**—MATERIALS.—650 tons of ¾-in. clean granite chippings, 150 tons of granite dust, and 1,000 tons of 1½ in. broken stone, or 100 tons (more or less) of 1½ in. tarred stone; 50,000 gallons of refined tar, for the T.C. Borough Surveyor.

JANUARY 24.—**Broadstairs and St. Peters.**—MATERIALS.—Tarred slag macadam, for the U.D.C. H. Hurd, surveyor.

JANUARY 24.—**Devon.**—MATERIALS.—Tarmacadam, granite, basalt, limestone, refined tar, bituminous compounds, lubricating oil, for the C.C. F. E. Simpson, County Surveyor, No. 2 Division, 21, Southernhay West, Exeter.

JANUARY 24.—**Finchley.**—MATERIALS.—Tar for tar-painting, crushed shingle, Guernsey granite chippings, slag tarmacadam, for the U.D.C. P. T. Harrison, engineer and surveyor, 9, The Hawthorns, Regent Park-road, Finchley, N.3.

JANUARY 24.—**Lindsey.**—MATERIALS.—Tarred macadam, broken stone and slag, refined tar, for the C.C. A. G. Bradshaw, County Surveyor, County Offices, Newland, Lincoln.

JANUARY 24.—**Uckfield.**—MATERIALS.—4,200 tons tarred macadam; 7,025 tons Mendip stone; 3,000 tons flint, grit or other suitable material for tar binder; 250 tons footpath gravel; 100,000 gallons tar or bituminuous compound suitable for the treatment of road surfaces, for the R.D.C. Capt. E. W. Ray-Johnson, Highways Surveyor, Surveyor's Office, Buxted.

JANUARY 25.—**Southall-Norwood.**—MATERIALS.—Guernsey granite; tar slag macadam; ballast, hoggin, shingle, sand; lime (Clay Cross and grey); aluminoferric; cement; stoneware pipes; tar, distilled, or other preparation, for the U.D.C. J. B. Thomson, engineer and surveyor.

JANUARY 27.—**Liverpool.** — MATERIALS.—Timber; ironmongery, &c.; steel sheets, wrought iron and files, for the T.C. The General Manager, Liverpool Corporation Tramways, 24, Hatton-garden.

JANUARY 28.—**Croydon.** — MATERIALS. — Broken granite, granite chippings, granite dust, granite kerb, tarred Kentish ragstone, tarviated slag macadam, for the C.B. Borough Road Surveyor.

JANUARY 29. — **Hertfordshire.** — MATERIALS.—Broken granite slag and tarmacadam, for the C.C. A. E. Prescott, County Surveyor, County Surveyor's Office, Hatfield.

JANUARY 31.—**Alton.**—MATERIALS.—Broken granite and limestone, for the R.D.C. A. O. Crew, Rodney House, Alton.

JANUARY 31.—**Beckenham.** — BRICKS. — 200,000 paving bricks, 2 in. thick, for the U.D.C. H. Storr Best, surveyor. Deposit £2.

JANUARY 31.—**Little Hulton.**—MATERIALS.—Broken granite, 4 by 5 granite setts, tar macadam, tarred limestone, limestone and slag chippings, grit kerbs, concrete flags, stoneware pipes and gullies, cement, for the U.D.C. J. H. Heyes, Clerk.

JANUARY 31.—**West Suffolk.**—MATERIALS.—Broken and unbroken road materials and local pit gravel, sand, and unbroken pit stone, for the C.C. E. H. Bond, County Surveyor, Bury St. Edmunds.

FEBRUARY 1.—**Amersham.**—MATERIALS.—Road materials, for the R.D.C. A. H. Prince, District Surveyor, High-street.

FEBRUARY 1.—**Canterbury.**—MATERIALS.—Broken granite and tarred macadam; flints, shingle, sand, &c.; Portland cement, bricks (best stocks), and timber; road surfacing compound; stoneware pipes and gullies, for the T.C. P. H. Warwick, City Surveyor and Engineer.

FEBRUARY 1.—**Karachi (India).**—PIPES.—**37,000 cwts of cast iron pipes from 3 in. to 27 in. diameter; 33 in. rising main of cast-iron pipes and sluice valves, stop valves and back pressure valves, for the Corporation. Chief Engineer, Municipal Offices.**

FEBRUARY 3.—**Cornwall.**—MATERIALS.—Bitumen, refined tar and compounds, roadstone, tarred macadam, for the C.C. E. H. Collcutt, County Surveyor, County Hall, Truro.

FEBRUARY 9.—**Leeds.**—GRANITE.—5,000 tons of ¾ in. slag nuts, 1,250 tons of ¼ in. whinstone or granite chippings, 1,250 tons of ¾ in. whinstone or granite chippings, 500 tons of ¼ in. whinstone or granite chippings, for the T.C. E. W. Cockerlyne, Highways Engineer, Swinegate.

FEBRUARY 9.—**Middlesex.**—MATERIALS.—1,300 tons of 2 in. machine-broken Clee Hill granite and ¼ in. Clee Hill granite chippings, also for 4,000 tons (more or less) tarred slag macadam, for the C.C. A. Dryland, County Engineer, County Engineer's Department, Middlesex Guildhall, Westminster, S.W. 1.

FEBRUARY 12. — **Felixstowe.** — MATERIALS. — Timber; cement; castings; pipes (stoneware), for the U.D.C. H. Clegg, surveyor.

FEBRUARY 15.—**Tottenham.**—MATERIALS.—Asphalt and tar paving, artificial stone paving, &c., for the U.D.C. E. Townson, Clerk, Town Hall, Tottenham, N. 15.

MARCH 3.—**Port Elizabeth.**—PIPES.—7,092 tons of 18 in. and 15 in. cast-iron pipes and specials, and valves, fittings and special castings, for the T.C. D. P. Howells, City Engineer; or Davis & Soper, Ltd., Agents for the City Council of Port Elizabeth, 54, St. Mary Axe, London, E.C. 3. Deposit £2 2s.

NO DATE.—**Litherland.**—MATERIALS.—Wrought-iron railings, Haslingden kerbing, sandstone pitching, granite chippings, tarred limestone macadam, for the U.D.C. G. Ponsford, engineer and surveyor.

ENGINEERING, IRON AND STEEL.

JANUARY 17.—**Brechin.**—STEELWORK.—Steel roof trusses, steel work of gallery and reinforcement, and steel beams for staircase, &c., required in the erection of a new picture theatre in Brechin, for the Cinema, Ltd. The Directors. Deposit £1 1s.

JANUARY 20. — **Lachmanghula.** — BRIDGE. — **Cables and steelwork of a suspension bridge to be built at Lachmanghula, Dehra Dun district, for the United Provinces of Public Works Dept. H. V. S. Dillon, Executive Engineer, Meerut Provincial Division, India.**

JANUARY 24.—**Lytham St. Annes.**—SEWERAGE.—Construction of approximately 700 yds. of concrete main sewer varying from 15 in. to 18 in. diameter, together with manholes, ventilating shafts, and other appurtenant works, for the T.C. G. W. Lawson, Borough Engineer and Surveyor. Deposit £5.

JANUARY 24.—**Wirral.**—SEWAGE.—Construction of a sewage purification works, drains and appurtenances at the Institution, Clatterbridge, Bebington, for the B.G. J. Commin, engineer, 5, Victoria-street, Westminster, S.W. 1. Deposit £2 2s.

JANUARY 25.—**Marsden.**—IMPROVEMENT.—Erection of a reinforced concrete bridge (over River Colne), widening of existing roadway, erection of stone retaining and fence walls, road forming, and other contingent works incidental thereto, in Church-lane, for the U.D.C. Abbey and Hanson, civil engineers, 11, Cloth Hall-street, Huddersfield. Deposit £2 2s.

JANUARY 25.—**Nottingham.**—WIDENING.—Widening of the bridge carrying Perry-road over the L. & N.E. Railway at Basford, for the T.C. T. Wallis Gordon, City Engineer and Surveyor. Deposit £2.

JANUARY 31. — **Egypt.** — BARRAGE. — **Construction of a barrage and subsidiary works on the River Nile, near Nag Hammadi, for the Ministry of Public Works of the Egyptian Government. Goode, Fitzmaurice, Wilson & Mitchell, Consulting Engineers to the Egyptian Government, 9, Victoria-street, Westminster; or the Legation of the Egyptian Government, 7, Charles-street, Berkeley-square, W.1.**

JANUARY 31.—**Peebles.**—EXTENSIONS.—To the water supply of West Linton, including small break pressure tank, 2,600 yds. of 4 in. cast-iron and other pipes, track cutting, meter, connections, fencing, and other auxiliary works, for the C.C. J. Thomson, C.E., 20, Melville-street, Edinburgh. Deposit £2 2s.

FEBRUARY 7.—**Ashby-de-la-Zouch.**—WATER SUPPLY—Construction of about 9 miles of cast-iron pipe water mains of varying sizes, from 6 in. to 2 in. diameter, together with all appurtenant works, pumping station and covered service reservoir, for the R.D.C. W. H. Radford & Son, consulting engineers, Albion Chambers, King-street, Nottingham. Deposit £3 3s.

FEBRUARY 24.—**Port Elizabeth.**—PLANT.—Supply and erection of a plant of the stationary type covering the whole cycle of operations necessary for the manufacture of bituminous asphaltic mixtures or tar macadam required for the construction of paved carriageways and footways, namely, drying, heating, measuring or weighing and mixing economically and with accuracy and the running of same for a period of two weeks after completion of erection, for the T.C. Department of Overseas Trade, 35, Old Queen-street, S.W.1. (A.X. 4045).

ROAD, SEWERAGE, AND WATER WORKS.

JANUARY 17.—**Guildford.**—SEWERS.—Construction of concrete roads and sewers on the Aldershot-road housing site, for the T.C. J. W. Hipwood, Borough Surveyor.

JANUARY 17.—**Manchester.**—PAVING.—**Sewering, kerbing, flagging, paving (concrete and tarmacadam), and completing the following streets, Nos. 1, 2, 3, 5, 7, 8, 9 & 10, on the Gorton Estate, Pink Bank-lane, for the T.C. City Engineer. Deposit £1 1s.**

JANUARY 17.—**Plymouth.**—MAKING-UP.—Of Verna-road, St. Budeaux, for the C.B. J. Wibberley, Borough Engineer and Surveyor.

JANUARY 17.—**Pudsey.**—FOOTWAYS.—**Reinstatement of flag and asphalte footways, approximate area 5,185 super yards, for the T.C. H. Noble, Borough Surveyor. Deposit £1 1s.**

JANUARY 17.—**Rathmines and Rathgar.**—ROAD.—Construction of road from Ranelagh-road to Sandford-road, for the U.D.C. Surveyor.

JANUARY 17. — **Saddleworth.** — WIDENING. — Of Hudderafield and New Hey main road, at Denshaw, for the West Riding C.C. West Riding Surveyor, County Hall, Wakefield. Deposit £1.

JANUARY 17.—**Staines.**—WIDENING.—**General road work in connection with the widening of Sunbury-road, Hanworth, including reinforced concrete raft, kerbing and storm water sewers, for the R.D.C. D. C. Fidler, engineer and surveyor, London-road, Ashford.**

JANUARY 18.—**Cardiff.**—STREET WORKS.—Executing private street works in Aber-street, Bargoed-street, Taff-embankment, Bargoed-lane, Clydach-lane, Corporation-lane East, Taff Embankment-lane, Taff Mead-embankment, Fairwater Grove-road, Waterloo-road, Lansdown-road, Lincoln-street, Brunswick-street, Grosvenor-street, Nottingham-street, Wembley-street, York-street, Grosvenor-lane East, Lansdown-lane, Lincoln-lane, Nottingham-lane East, Nottingham-lane West, Wembley-lane, York-lane East, York-lane West, Laytonia-avenue, Thompson-avenue, for the T.C. City Engineer.

JANUARY 18.—**Godstone.**—DRAINAGE.—**Construction of about 940 yards of 9 in. diameter stoneware and cast-iron pipe sewers with the necessary manholes and other appurtenances, also for the construction of detritus settlement tanks, filter beds, humus tanks, sludge and humus beds and lines of pipes, and for making alterations to existing works at their sewage treatment works, for the R.D.C. John Taylor & Sons, engineers, Caxton House, Westminster, S.W.1. Deposit £5.**

JANUARY 18.—**Lanark (Middle Ward).**—ROAD.—Road construction work, &c., in connection with the housing scheme at Kingshill, near Newmains, for the C.C. P. C. Smith, Housing and Town-Planning Department, District Offices, Hamilton.

JANUARY 18.—**Mitcham.**—MAKING-UP.—Of (*a*) Annie-road, (*b*) Milton-road, (*c*) Stanley-road, for the U.D.C. Surveyor, Broadway House, London-road, Lower Mitcham.

JANUARY 19.—**Braintree.**—Providing and laying 1,596 yds. concrete kerb and channel, making-up carriageways and footways, providing, excavating and laying 1,850 ft. of 9 in. and 1,580 ft. of 6 in. stoneware pipe sewers, together with the necessary manholes and other contingent work, for the U.D.C. Surveyor.

JANUARY 19.—**Chartham.**—DRAINS.—**Construction of about 600 yards of 6 in. and 9 in. diameter stoneware effluent drains, with the necessary manholes and other appurtenances, also for the construction of settlement tanks, filter beds, humus tank, sludge and humus beds and lines of pipes, and for making alterations to existing works at their sewage treatment works, for the Kent County Mental Hospital Committee. John Taylor & Sons, engineers, Caxton House, Westminster, S.W.1. Deposit £5.**

JANUARY 19.—**Prestwich.**—MAKING-UP.—Sewering, and draining Circular road, in three sections, as follows: (1) From Buckingham-road to passage to back George-street; (2) from passage to back George-street to Bland-road; (3) north from Bland-road to Hilton-crescent, opposite Chandos-road (a portion of which is now called Chandos-road), for the U.D.C. M. A. Piercy, Engineer and Surveyor. Deposit £1 1s.

JANUARY 20. — **Carmarthenshire.** — WIDENING. — Carrying out road diversion and widening at (*a*) Tanygraig on the Llandilo to Llandovery main-road; (*b*) Bonllwyn on the Llandilo to Ammanford main-road; and (*c*) Tvisaf on the Llandilo to Ammanford main-road, for the C.C. D. S. Samuel, County Surveyor, County Surveyor's Office, Carmarthen. Deposit, £2 2s.

JANUARY 20.—**Failsworth.**—MAKING-UP.—Sewering, levelling, paving, metalling, flagging, channelling, and making-up parts of Norman-street, Wesley-street (2), Minor-street (2), together with certain adjacent passages, for the U.D.C. J. W. E. Brown, engineer and surveyor.

JANUARY 20.—**Stockport.**—SEWERS.—Constructing and laying 54 in., 48 in., and 30 in. diameter concrete pipe culverts along brook-course; 42 in., 30 in., 24 in., 18 in., 15 in., 12 in., and 9 in. diameter main surface water drains in Lowland-road, Moorland-road, Woodsmoor-lane, and in private lands; 30 in. and 24 in. diameter cast-iron pipe drains in heading under the L.M. & S. Railway (Stockport and Buxton Branch); together with manholes, ventilators, and other appurtenant works, for the C.B. Herbert Hamer, Borough Surveyor. Deposit £5 5s.

JANUARY 20.—**Stockport.**—SEWERS.—Constructing and laying 18 in. and 15 in. diameter stoneware pipe sewers in private lands, Park-row, and Vale-road, Heaton Mersey; together with manholes, ventilators, and other appurtenant works, for the C.B. Herbert Hamer, Borough Surveyor.

JANUARY 22.—**Farnborough.**—STREET WORKS.—Improvements in Osborne and Park-roads, for the U.D.C. J. E. Hargreaves, Surveyor. Deposit £2 2s.

JANUARY 24.—**Alnwick.**—PIPES.—Providing and laying 64 yds. of 12 in. glazed sanitary ware pipes at the north-western sewer, Almouth, for the R.D.C. Clerk, 24, Fenkle-street.

JANUARY 24. — **Chester.** — SEWERAGE. — Sewerage works, comprised in sections 4 and 5 of the Handbridge sewerage scheme, to be constructed in glazed stoneware pipes, up to 12 in. in diameter, and concrete pipes, 15 in. diameter, for the T.C. C. Greenwood, City Engineer and Surveyor. Deposit £1 1s.

JANUARY 24.—**Faversham.**—SEWERAGE.—**Sewerage and sewage disposal in the parishes of Teynham and Lynsted. The works will comprise 4,147 yards of 7 in. diameter stoneware and 149 yards of cast-iron sewers, 1,156 yards of 9 in. diameter stoneware and 49 yards of cast-iron sewers, together with all manholes, ventilation columns, &c., sedimentation tanks, filter beds, and all works incidental thereto, for the R.D.C. Howard Humphreys & Sons, consulting engineers, 28, Victoria-street, Westminster, S.W.1. Deposit £3 3s.**

JANUARY 24.—**Monmouthshire.**—ROAD.—Construction of the portion of proposed road (Aberbargoed to Markham) in front of the new Council school at Markham Village, Mon., for the C.C. J. Bain, F.R.I.B.A., County Hall, Newport, Mon. Deposit £1 1s.

JANUARY 24.—**West Derby.**—REPAIRS.—Proposed roadwork, garden paths and retaining walls at Cleaver Sanatorium, Heswall, for the B.G. E. B. Bailey, L.R.I.B.A., 9, Cook-street.

JANUARY 24.—**Winchester.**—DRAINAGE.—Construction of five settlement tanks, with gauge house; the construction of 11 sludge beds, small filter and humus tank; the erection of a high level pump house, and lines of pipes in connection with their sewage farm, which is about 2¼ miles from Winchester station (Southern Railway), and three-quarters of a mile from Winchester station (Great Western Railway), for the T.C. John Taylor & Sons, engineers, Caxton House, Westminster, S.W. 1. Deposit £5.

JANUARY 25.—**Ossett.**—ROAD.—Construction of a 6 in. foul sewer and of the pitched stone foundations for a new road on the Queen's-drive estate, for the T.C. H. Holmes, Borough Engineer and Surveyor.

JANUARY 25.—**Southall-Norwood.**—ROADWORKS.—In Norwood-road, comprising trench reinstatement and road widenings, with a small concrete retaining wall, for the U.D.C. J. B. Thomson, engineer and surveyor. Deposit £2 2s.

JANUARY 26.—**Hove.**—STREET WORKS.—Constructing sewers, forming roadways, laying kerbing, channelling, and other works in connection with the housing estate at "The Knoll," Old Shoreham-road, for the T.C. Borough Surveyor.

JANUARY 31.—**Beckenham.**—MAKING-UP.—Of Cator road, Lennard-road, Morland-road, and Courtenay road, for the U.D.C. H. Storr Best, surveyor. Deposit £2.

JANUARY 31.—**Carshalton.**—EXTENSIONS.—Sewer extension at Banstead-road, for the D.C. W. Willis Gale, surveyor. Deposit £2.

JANUARY 31.—**Loughborough.**—SEWER.—1,015 yds. of 18 in. cast-iron, concrete tube, and stoneware pipe sewers; and about 380 yds. of 9 in. stoneware pipe ditto; together with manholes, &c., from Moor-lane to Leicester-road, for the T.C. W. Granger, Borough Surveyor. Deposit £2 2s.

FEBRUARY 1.—**Clacton-on-Sea.**—STREETS.—Construction of the following street works: (1) Connaught-gardens West; (2) Albany-gardens East; (3) Albany-gardens West; (4) Lancaster-gardens East; (5) Lancaster-gardens West; (6) Albert-road; (7) Victory-road; (8) Tewkesbury-road (part of); (9) Croft-road (part of); (10) Wargrave-road; and (11) Great Clacton Housing Scheme road, for the U.D.C. Surveyor.

FEBRUARY 14.—**Barnstaple.**—MAKING-UP.—Of six roads on the Yeo Vale estate, for the T.C. E. Y. Saunders, Borough Surveyor, Castle-street. Deposit £3.

MARCH 1.—**Egypt.**—ASPHALT.—3,700 tons of natural lake asphalt, for the Tanzim Department of Egyptian Ministry of Public Works. Department of Overseas Trade, 35, Old Queen-street, S.W.1.

Competitions.

(*See Competition News page* 81.)

Auction Sales, Tenders, etc.

JANUARY 18.—**Wallington, Surrey.**—Dixon & Co. will sell, on the premises, Bute-road, Wallington, plant and machinery of a building contractor. Auctioneers, 2, Woodcote-road, Wallington, and at Railway-approach, Sutton and Cheam.

Public Appointments.

JANUARY 17.—**Essex.**—ARCHITECTURAL ASSISTANT required in the Architect's Department, on the temporary staff, for the Essex County Council. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court Chelmsford.

JANUARY 17. — **Wolverhampton.** — Engineering Assistant (temporary) required by the Corporation. H. B. Robinson, M.Inst.M. & Cy.E., Borough Engineer, Town Hall, Wolverhampton.

JANUARY 20. — **Leeds.**—Clerk of Works required. The Registrar, The University, Leeds.

✱JANUARY 21.—**Kingston-upon-Hull.**—Junior Architectural Assistant in the City Architect's Department required by the Hull Corporation. Candidates should have served articles with a firm of architects. D. Harvey, A.R.I.B.A., City Architect, Guildhall, Hull.

✱JANUARY 21. — **Barking.** — Second Grade Clerk in the Engineer and Surveyor's Department of the Council. H. Hargreaves, Clerk to the Council, Public Offices, Barking.

JANUARY 24.—**Essex.**—Qualified Quantity Surveyor required by the Essex County Council on the staff of the County Architect's Department. Jno. Stuart, F.R.I.B.A., County Architect, Old Court, Springfield, Chelmsford.

JANUARY 31.—**London.**—Full-time Teacher of Carpentry and Joinery, Building Construction and Mathematics required by the Middlesex E.C., at the Willesden Polytechnic Junior Technical School (Building) for Boys, N.W.6. The Principal, Willesden Polytechnic, Priory Park-road, Kilburn, N.W 6.

✱NO DATE.—**London.**—Clerk of Works (temporary) for the supervision of construction of cubicle Isolation Hospital block and additions required by the Barnes U.D.C. F. P. Kindell, Engineer and Surveyor, Council House, High-street, Mortlake, S.W.14.

✱NO DATE.—**London.**—Technical (Engineering) Assistant is required for a temporary engagement in the Architect's Department of the London County Council. Architect to the Council, The County Hall, Westminster Bridge, S.E.1.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B.E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board.

ALDERLEY EDGE.—The Committee of Management of the David Lewis Manchester Epileptic Colony at Warford have decided on an extension of "M3" house, increasing the accommodation by eight beds.

ASHBURTON.—The U.D.C. has received from the M.H. approval to the erection of 14 additional houses.

BALCOMBE.—The Cuckfield R.D.C. propose erecting working men's houses in Dean Land-road.

BARROW.—The Ministry has held an inquiry into the Corporation application for seeking to develop Biggar Bank, on the Irish Sea, and to borrow £10,000 to provide bathing and paddling pools, shelters, day huts, and a miniature golf course, which are part of the scheme.

BIRMINGHAM.—Over £16,000 has so far been received towards the £30,000 appeal fund to purchase church sites in the new suburbs of Birmingham. One parish has already guaranteed to purchase a site in one of the new suburbs, and other parishes have sent in promises of varying amounts.—The City Council has decided to acquire the Bingley Hall site and other land on the Easy Hill estate for the scheme for the new Civic Centre.

BLACKBURN.—The M.H. has approved the borrowing by the T.C. of £2,720, to purchase 11 acres of land near Roe Lee Park, part of which is to be used for a new school. The E.C. propose to buy 6¼ acres of land adjacent to Sherrock-lane, at an estimated cost of £1,775, for school purposes.—A scheme has been got out for extending the Technical College, at a cost of £45,000; and the building of three schools, at an estimated cost of £74,000.

BLACKPOOL.—The C.B. passed plans: Six houses, North-drive, Norbreck, W. Spencer; two houses, Ullswater-road, T. & C. Hilton; bungalow, Selby-avenue, H. Atkinson; two bungalows, Salmesbury-avenue, Thomas Brierley; two houses, Montpelier-avenue, W. H. Smith; five houses, Boothley-road and Coleridge-road, Charles Smith; five houses, Bela-grove, C. Davies; house, Berwick-road, C. Britton; 37 houses, Lynton-avenue, Edmondson & Colwell; 21 houses, Woodstock-gardens, C. Francis; two bungalows, Hemingway, Slater & Parkinson; bungalow, Peddars-lane, M. Baxter; nine houses and two garages, Layton-road, James Tomlinson; two houses, Fleetwood-road, Fielden & Dawson; eight houses, Grenfell-avenue and Jackson-street, W. Tasker; two houses, Warbreck Hill-road and Pierston-avenue, G. Hodgson & Sons, Ltd.; two houses, Warbreck Hill-road, G. Hodgson & Sons, Ltd.; two houses, Watson's-road, Mrs. M. Cookson; house, Park-drive, T. Smith; flat, Caunce-street, Mr. Davy; bungalow, West Park-road, J. Smith; house, Park-drive, S. Smith; five houses, Eastbourne-road, Davis & Sudders; 78 houses, Marsden-road, Edmondson & Colwell.

BOLTON.—A scheme for remodelling the Lostock Industrial School for conversion into an open-air school for the Education authorities has been approved.—Modified plans of the war memorial site, submitted by Mr. A. J. Hope, F.R.I.B.A., have been approved.

BOURNEMOUTH.—The T.C. passed plans: Bungalow, Sutton-road, Mr. Wilson; house, Mortimer-road, E. Moorman; house, King George's-avenue, B. C. Butchers; two houses, Lystra-road, H. Fry; two houses and garages, Belle Vue-road, H. Hoare; house and garage, Queen's Park-avenue, A. Harris; house, Littledown-avenue, F. Collins; house, 18, Southwood-avenue, W. H. Hyett; four houses, Kilmarnock-road, S. G. Ward; lock-up garages, Branksome Dene-road, E. Parker; house, Tuckton-road, W. R. Wilkins; house, next to "Edale," Marine-road, J. Parnell; two houses, Albemarle-road, G. F. Jordan; three houses and garages, Brackendale-road, Mrs. J. Axon; amended plan, house and garage (corner), Strouden Farm-road, W. Blackburn; amended plan of house and garage, Bethia-road, W. F. Alner; house, Pine-road, S. E. Francis; house and garage, East-avenue, A. Barnes; amended plan of house, De Lisle-road, A. Barnes; garage and flat, Leven-avenue, Mrs. G. Waddilove.

BRIGHOUSE.—The W.R. Education Committee has aproved a scheme for the erection of a technical school and a boys' secondary school, at an estimated cost of £63,940.

BUCKLEIGH SALTERTON.—The Cottage Hospital Committee are proposing to extend the staff quarters at the hospital at £600.

BURNHAM.—The U.D.C. has passed plans: House in Crouch-road, for J. H. Jackson; two houses in Chapel-road, for P. Nichols and J. Haley; two pairs of houses in Western-road, for Aba Cole and F. Agate.

BURNLEY.—The T.C. has passed the following: Public hall in Bridge-street and Bank-parade, by L. Smith; nine houses in Lockyer-avenue, by M. & J. W. Heap, Ltd.; four houses, next to Cross-street, by T. Kelshaw; two houses in Kiddrow-lane, by W. H. Sanderson; bungalow in Cross-street, by H. E. Webb; eight houses in Briercliffe-road, by J. Atkinson; two houses in Cross-street, by Kelshaw & Lee; two houses, next to Cross-street, by Kelshaw & Lee; 22 houses on the Lower Rosehill housing site, by L. Todd & Co.—It is proposed to construct a central garage adjoining the cleansing depot, for Corporation motor vehicles; the estimated cost of the scheme, including the acquisition of the site, is £7,500.—It is proposed to make provision for a new school in the Healey Wood area and to apply to the M.H. for sanction to acquire 7¼ acres of land adjacent to Lockyer-avenue, as a site for a new central shcool.—The General Purposes Committee has approved the construction of 88 more houses on the Stoops Farm site, at an estimated cost of £40,128.

CALDBECK.—The erection of a stone bridge at a cost of £9,000, to span two fords in the village of Caldbeck, is to be proceeded with by the Cumberland C.C.

CAMPDEN.—The R.D.C. has decided to provide further houses as follows:—Moreton-in-Marsh 8, Campden 8, Ebrington 4, Quinton 4, Mickleton 10.

CARDIFF.—Lord Kenyon, president of the Welsh National Museum, has received an intimation from Lord Buckland that he intends to contribute £35,000 to the building fund of the institution. The next range of galleries to be proceeded with is estimated to cost £46,000.

CHERTSEY.—The Housing Committee of the Chertsey U.D.C. has received the M.H.'s approval to the Council proceeding with the erection of the 24 houses on the undeveloped portion of the Green-lane site.

CHESTER-LE-STREET.—The U.D.C. has appointed a sub-committee to inspect a site for the erection of a fire station.

CHORLEY.—A proposal of the managers of the Parochial School, for the improvement of the school premises, by the provision of an assembly hall and five separate classrooms, has been forwarded by the E.C. for approval.

CLACTON-ON-SEA.—The U.D.C. passed plans: House Park-way, for E. F. Wilson; six houses, Coppins-road, and six, Branston-road, for T. Pethybridge; two houses, Severn-road, for G. Moxon; shop and store, Coppins-road, for G. Moxon; two houses, Coronation-road, for E. Barton; 16 bungalows, Jay Wick-lane, for A. H. Gratton; shop and garage, West-avenue, for Mrs. M. C. Stapleton; 10 houses, Branston-road, for A. H. Brown; eight houses, St. Osyth-road, for A. H. Denham; two houses, Thoroughgood-road, for S. W. Hampton; house, Skelmersdale-road, for G. H. B. Gould; house, Freeland-road, for Mrs. F. Ritchie.

CLITHEROE.—The Borough Surveyor has been instructed to proceed with the erection of smaller houses on the new portion of the building estate at Henthorn.

COLCHESTER.—The T.C. passed plans: Bungalow, St. Botolph's-hill, Bergholt-road, for Mrs. Waller, per T. H. Baker; house, St. Helena-road, for A. E. Flory & Co.; pair of houses, Maldon-road, for Messrs. Appleton & Moss; pair of houses, Ipswich-road, for W. H. Gooday & Co.; pair of houses, Scarletts-road, for E. A. Cook, per Mr. C. A. Ellis; two detached houses, Ipswich-road, for H. Everett, per C. A. Ellis; four houses, Mersea-road, for H. Coulson, per W. J. Jeffard; house, Mile End-road, for Miss A. M. Knott, per A. T. Clarke; house, Ipswich-road, for C. Pooley, per H. G. Pryke; pair of houses, Mile End-road, for E. A. Cook, per C. A. Ellis; bungalow, St. John's-road, Parson's Heath, for W. H. Philbrook, per C. A. Ellis; two houses, Drury-road, for W. H. S. Smith; two houses, Cambridge-road, for O. S. Locke; bungalow, Bergholt-road, for A. J. Diss; house, Chitt-hill, Lexden, for H. W. Asher; two pairs of houses, Port-lane, for Grimsey Bros.; house, King Harold-road, for Mrs. L. James, per W. S. Williams; house, Maldon-road, for G. J' Hearsum; bungalow, Church-lane, Lexden, for E. Hales; pair of houses, Serpentine-walk, for T. Macklin.

COLNE.—Plans have been approved for eight houses at Melford-street, for A. D. Bailey.

COULSDON AND PURLEY.—The U.D.C. recommend that the Council authorise the preparation of a scheme for the erection of 50 additional houses at Coulsdon.—The Surveyor is to continue his investigations for the acquisition of suitable sites at Sanderstead for the erection of houses.—Plans passed: Chester & Hopkins, house, corner of Woodmansterne-road, Coulsdon; M. Dovey, house, Hillcrest-road, Purley; R. C. Barwood, two houses, Marlpit-lane, Coulsdon; F. J. Webb, 12 semi-detached houses, Green-lane, Purley; F. W. Thomas, 14 houses, Church-way, Sanderstead; T. Ibbetson, house, Church-way, Sanderstead; H. C. Doddrell, two semi-detached houses, Clifton-road, Coulsdon; W. J. Frewing, two houses, Purley Bury-avenue, Purley; T. Whichelo, bungalow, Limpsfield-road, Sanderstead; H. Thomas, 14 semi-detached houses, Grasmere-road, Purley; F. Flood, house, Church-way, Sanderstead; Rev. S. W. G. Frost, vicarage at St. Andrew's Church, Julien-road, Coulsdon; R. Ray, two semi-detached houses, Victoria-road, Coulsdon.

DARWEN.—The Co-operative Society have acquired land at Birch Hall for the erection of houses.

DAWLISH.—The M.H. has agreed to the purchase by the U.D.C., on the Luscombe estate, of the site required for a housing scheme, and has provisionally approved of the erection of houses. The Council has decided to send the architect (S. Churchward) to London for a discussion with the department.

DONCASTER.—Plans are being prepared for a new R.C. day school in connection with St. Peter's R.C. Church. The architects are Empsall, Clarkson & Clarke, Bradford. Tenders are to be invited shortly.—Marks & Spencers, Ltd., have acquired a site upon which they propose to erect new shop premises.

DOWN.—The Regional E.C. has intimated to the Newcastle U.D.C. that the consent of the Ministry of Education has been obtained to the acquirement of the site in the Council's field for the erection of a technical school.

DUDLEY.—The T.C. has received the sanction of the M.H. to the erection of 56 houses on the Watson's Green site. The Council are now inviting tenders for the erection of 60 more houses on the estate.

DUNMOW.—The R.D.C. has recommended that application be made for sanction to build 20 additional houses at Dunmow, and smaller numbers in other parishes.

DURHAM.—The City Council has approved the programme of the E.C., which provided for the erection of a new school. The new school will have accommodation for 360 boys and a similar number of girls, and the cost of the building will be about £18,000.

EASTBOURNE.—The T.C. recommend that application be made to the M.H. for a further extension of the Council's subsidy scheme, to apply to 100 houses.

EAST HAM.—The C.B. recommend that upon receipt of the approval of the M.H. the Town Clerk be directed to apply for sanction to borrow the sum of £41,621 in respect of the cost of erecting 64 houses on the Central housing site.—Plans passed:—Two houses, Market-street, corner Ranelagh-road, G. Saxton; three houses, 157–161, Third-avenue, W. Cooper; eight lock-up garages, corner Dersingham-avenue and Church-road, S. Batchelor; ten houses, 63–71, Church-road, and 136–144, Meanley-road, G. H. Stickland.

ECCLES.—The T.C. passed plans: J. Gerrard & Sons Ltd., Swinton, 18 semi-detached houses proposed to be erected on land abutting on Chatsworth-road, Sandwich-road, and Westminster-road; J. H. Turner, eight semi-detached houses, proposed to be erected in Pinegrove, Monton; C. H. Waters, three houses proposed to be erected on the south side of Gilda-crescent-road, Eccles.

EGHAM.—The U.D.C. are providing 100 houses, at a cost of £47,443.

ETON.—The R.D.C. has passed plans: Three houses in Downs-road, for H. Street; house in Sutton-lane, for S. Crevald; shop and garage in Bath-road, for F. Ayres; two houses for A. Cooper; two houses in School-lane for Church Army Housing, Ltd.; house in Oxford-road, for Miss Hetherington; house for J. H. Carter; house for C. G. Wells; four houses for E. H. Stiles, Farnham Royal.

FINCHLEY.—The U.D.C. passed plans: Two houses, Clifford-road, G. E. Green; five houses, Cavendish-avenue, W. Potts & Son; two houses, Southway, W. S. Gibson; 21 garages, rear of College Villas, Regent's Park-road, W. Ashby.

FRIERN BARNET.—The U.D.C. has passed plans: Bungalow, Myddleton-park, for Steed's Ideal Homes, Ltd.; house, Balfour-grove, for J. B. Dudley; houses, Friern-lane, for Dr. J. J. Shepherd; two houses, Church-way, for Campkin & Elphick.

FRIMLEY.—The U.D.C. has received the sanction of the Ministry to the borrowing of £24,000 in respect of the Watchette housing scheme.

GREAT HARWOOD.—The members of the P.M. Church are raising funds to defray the cost of building a proposed new church.

GUILDFORD.—The T.C. passed plans: Six detached houses, Berkingham-road, for W. R. Stirling; house, 7, Guildown-avenue, for J. M. Rutter & Co.; bungalow, Orchard-road, Onslow Village, for E. T. Huxtable; 100 houses, Curling Vale, Onslow Village, for Onslow Village, Ltd.; house, Madrid-road, for H. W. Kearn; house, Aldershot-road, for Mrs. A. Holford; two flats, off George-road, for A. J. Collins; house, Stocton-road, for A. G. Ellsley.

HALIFAX.—Mr. H. F. Bentley, builder, proposes to lay-out an estate off Swires-road and Arden-road, and to erect thereon 62 houses.—Application is to be made to the M.H. for sanction to borrow £61,926 in connection with 156 houses on the Bracewell Farm housing site; £21,817 in connection with 58 houses on the Nursery-lane housing site, No. 3; and £24,310 for 58 houses on the Nursery-lane housing site No. 4.

HAYES.—Plans have been approved by the U.D.C. for 64 houses, North Hyde-road and Sandow-road for Mackenzie & Sons; 50 houses, Minet-drive, for the, Great Western Garden Village Society; 24 houses at Yeading, for S. L. M. Avery.—In his report before the Staff Committee, the Surveyor, referring to proposed developments in the district, mentioned the houses and also a scheme for 520 houses in Yeading-lane and High-road.

HAYWOOD.—The M.H. has sanctioned the borrowing of £42,700 for the erection of 100 houses.

HEMSWORTH.—The Joint Hospital Committee has received the Surveyor's plans and estimates for the erection of a modern laundry at the Isolation Hospital at Brierley Common. He estimated the cost at £3,500.

HEREFORD.—The City Council has approved the proposal to erect new public baths at a cost of £12,000, and application for sanction to apply for the necessary money is also to be made.

HOYLAND NETHER.—The U.D.C. has approved of a recommendation of the Finance Committee to make application to the M.H. for sanction to borrow the sum of £18,390 for the erection of 38 houses at Platts Common.—Application is to be made to the M.H. for sanction to advertise for tenders for the erection of 50 houses at Hawshaw-lane.

ILFRACOMBE.—The U.D.C. have instructed the Surveyor to submit a plan and estimates of the cost, not exceeding £5,000, of excavating on the north side of the Capstone-parade, and constructing a shelter with a roof available for taking deck chairs, the scheme to provide for a bandstand in connection with the extension of the pavilion.

IPSWICH.—The C.C. has approved both the recommendations of the Finance Committee for the provision of additional office accommodation, &c., at the County Hall. The scheme has been prepared by H. M. Cautley. The Committee are to be authorised to invite tenders. The scheme has been estimated to cost between £14,000 and £15,000, and the purchase of some property opposite the County Hall to be utilised by the Roads and Bridges Committee for garage and storage accommodation, also additional land facing St. Helen's.

KIDDERMINSTER.—The T.C. passed plans: The Midland Counties Circuit, Ltd., dance hall, Vicar-street; G. H. Mason, house, Marlpool-lane; H. Penney

*See also our **List of Contracts, Competitions, &c.**

and Mrs. M. Wyer, two houses and shops, Coventry-street; S. Brookes, house, Marlpool-lane; A. E. T. Hassall, two houses, Aggborough-crescents.

LANGPORT.—The Office Staff Accommodation Sub-Committee presented a report on the consideration of proposals to adapt a portion of the Institution for the accommodation of the Council's staff, at an estimated cost of £1,050. The R.D.C. eventually agreed to ask the architect to prepare a full scheme for the adaptation of part of the Institution.—Application is to be made to the M.H. for provisional approval for the erection of 16 houses—four in each of the parishes of Barton St. David, Isle Brewers, Long Sutton, and Puckington.

LEEDS.—The following plans have been approved: Leeds Corporation Property Committee, amended plan of dance floor and w.c. at York-road baths; M. Goldstone, hall to Victoria Picture Hall, Glenthorpe-grove and crescent; Armley Rink Co., amended plans for conversion of skating rink into dance hall, café and concert room, Eyres-avenue; W. Hill & Son (Carriers), Ltd., amended plan of garage and dance hall, Roundhay-road and Harehills-avenue, Potternewton; R. Turnbull, 29 houses, Braithwaite-row estate, Hunslet; J. W. Dufton & Sons, Ltd., four semi-detached houses, Swinnow-avenue, Bramley; J. W. Dufton & Sons, Ltd., six semi-detached houses, Broad-lane, Bramley; F. Galley, four semi-detached houses, Grove Hall-avenue, Beeston; J. H. Crowther, house, Farrer-lane, Cookridge Gardens estate, Adel; F. B. Booth, two semi-detached houses, Barwick-road, Stanks; W. Corker, two semi-detached houses, Hetton-road, Copgrove-road, Harehills; R. Battersby & Sons, six semi-detached houses, Well House-drive, Harehills; the North Eastern Railway Cottage Homes and Benefit Fund, two semi-detached houses, Kirkstall-lane, Headingley; F. Rawnsley, four houses, off Swinnow-road, Bramley; A. Cryer, 16 through and two semi-detached houses, Skelton-terrace, White Horse estate, York-road; J. Bedford & Co., two semi-detached houses, Lincroft-crescent, Broad-lane, Bramley; G. Stocks and W. Hudson, two bungalows, Farm Hill, Meanwood; W. J. Lowe and Lillian Lowe, bungalow, off Stanningley-road; C. B. Webdale, two semi-detached houses, Mexborough-street, Chapel-town-road; T. Morley & Sons, eight houses, Lupton-avenue, Harehills; H. Carter and J. T. McCullock, two semi-detached houses, Barwick-road, Stanks.

LEICESTER.—The Highway and Sewerage Committee have approved plans to the number of 630 for the erection of new buildings, and the alteration of existing buildings. The list includes 296 new houses, 228 additions and alterations, 19 shop fronts, and nine warehouses, factories and workshops.

LLANGOLLEN.—Councillor Ilves has made a gift of £2,000 towards the cost of erection of a new town hall for the borough.

LONDON (GREENWICH).—The B.G. propose installing a new heating and hot-water system at the Institution, at an estimated cost of £17,000, and provision is made for a new boiler house.

LONDON (HACKNEY).—The B.C. recommend that Edward Wood & Co. be approved as the sub-contractors of J. Jarvis & Sons, Ltd., for the erection of the Stamford Hill sub-station.—Plans passed: W. Ball & Sons (Highbury), Ltd., six garages abutting on the south-eastern side of Castlewood-road, rear of 106, Clapton Common; F. T. Adams, two houses abutting on the western side of Knightland-road, at rear of 144 and 146, Upper Clapton-road; G. H. Burgbes, four bungalows, Ashstead-road, adjoining No. 44.

LONDON (WIMBLEDON).—The B.C. passed plans: W. H. Whitehead & Co., pair of semi-detached villas and one villa adjoining, next to 42, Richmond-road; Whitehead Bros., four lock-up shops at 136, Alexandra-road; A. J. Styles, house and garage, 23, Ernle-road; F. H. Skeens, five houses in Abbott-avenue; A. J. Styles, house in Almer-road, at the corner of Ellerton-road.

LONDON (WOOLWICH).—The B.C., on November 9, 1926, approved the proposals of Holdsworth Bros. for erection of additional buildings, and the L.C.C. have disapproved the proposals, and so Messrs. Holdsworth have accordingly submitted revised plans, which the B.C. recommend to be approved.—The Council recommend that application be made to the L.C.C. for their sanction to borrow the sum of £31,968 for the carrying out of the sewer work in connection with the erection of 500 concrete houses on the Council's housing estate at Eltham.—Plans passed: W. Childs, bungalow, Glenlea-road, Eltham; S. Browne, two lock-up shops, Westmount-road, Eltham; S. Browne, 10 houses, Footscray-road, Eltham; F. H. Buen, 10 houses, Footscray-road, Eltham.

LUTON.—The T.C. passed plans: Edgson & Wilsdon, three shops, 2–8, George-street; E. Taylor, two shop premises, Upper George-street; F. Chandler & Son, house, Alexandra-avenue; A. Bone & H. Pickering, two houses, Park-road; E. Wildman, house, Richmond-hill; Luton Industrial Co-operative Society, Ltd., new shops, Ridgway-road; Hucklesby & Panter, house and shop, corner Stockingstone-road; W. D. Dyer, two houses, Alexandra-avenue; W. T. Beale, two houses, Wardown-crescent; J. Buckingham, house, Park-road; E. G. Bell, four houses, Newark-road; A. Tate, four houses, Newark-road; A. Catlin, house, Ferndale-road; C. S. Sivil, house, Stockingstone-road.

LYMM.—A site in Pepper-street has been acquired for the erection of 20 houses, at an estimated cost of £8,955.

LYTHAM ST. ANNES.—Tenders have been accepted for 12 houses at Ansdell, 30 at Lytham, and 30 at St. Annes.

MAIDSTONE.—The T.C. passed plans: Buckland-road, 12 houses, for the Southern Railway; new road off Loose-road, 22 houses, for W. T. Burrows & Son; Curzon-road, house, for R. E. Marsh; Buckland-lane, 26 houses, for Cox Bros.; Hackney-road, house, for T. G. Large; Tonbridge-road, three lock-up shops, for H. W. Bennitt; Barker-road, warehouse, for G. Foster Clark & Co., Ltd.

MANCHESTER.—The T.C. passed plans: Eleven houses, Vicar-road, Chorlton-cum-Hardy; eight houses, Gildridge-road and Springbridge-road, Withington; four houses, Badminton-road and Granville-road, Chorlton-cum-Hardy; seven houses, Withington-road and Brantingham-road, Withington; four houses, Manley-road, Withington; 10 houses, Maidstone-avenue, Chorlton-cum-Hardy; 24 houses, Old Hall-lane, Rusholme; eight houses, Didsbury Park-road, Ruabon-road and Dalston-drive, Didsbury; house and two shops, Moston-lane and Broadway, Moston; revised plan of house, Church-street, Harpurhey; house, Boardman-road and Moorland-avenue, Crumpsall.—The M.T. has approved of an expenditure of £69,491 upon a new road from Church-lane, Harpurhey, to Thorpe-road, as an unemployed relief scheme.

MIDDLESBROUGH.—The Governing Council of the Constantine Technical College have decided to invite tenders for the erection of the College. The Constantine family have provided £80,000 towards the cost of the building.

NELSON.—The T.C. passed plans: D. Flory & Sons, four houses, Leamington-street, and five houses, Meredith-street; Priestley & Smith, four houses, Avondale-road; T. Dent & Sons, four houses, Chapel Hill-road; Whitefield Room & Power Co., offices, S. Mary's-street.

OXFORD.—The T.C. have sanctioned a supplementary estimate of £115 to meet certain repairs to buildings on the Farm.—The Council recommend that, in view of the necessity for additional accommodation in St. Giles', the City Engineer's plans previously submitted for extending the St. Giles' public convenience be adopted, and that he be authorised to prepare a specification of the work and invite tenders for its execution.—Plans passed: E. Shermer, house, Warwick-street; F. Harper, house, Cowley-road; F. Organ, house and shop, corner of Glanville-road and Cowley-road.

PRESTON.—The Watch Committee recommend that the plans of the proposed Strand-road police station to be erected on a site adjoining The Wheat Sheaf Hotel, at an estimated cost of £1,600, be approved and submitted to the Home Secretary for approval.—The E.C. has approved plans for an extension at the Park School, providing two new class-rooms and cloak-rooms and enlarging accommodation in the existing cloak-room, at an estimated cost of £1,500.

READING.—The M.H. has approved the acceptance of the tender of E. Clarke & Sons, amounting to £66,522 10s., for the erection of 137 houses on the Oxford-road site.

RETFORD.—The T.C. has decided to make application to the M.H. for provisional approval to the erection of a further 20 non-parlour type houses on the Corporation housing estate.

ST. ALBANS.—The R.D.C. has agreed to the erection of 20 cottages, 16 of the three-bedroom type, and four of the two-bedroom type, at Wilkins Green.

SEAFORD.—An application to the M.H. for sanction to borrow £10,500 for the erection of municipal buildings in Dane-road by the U.D.C. has led to the holding of an inquiry.

SOUTHGATE.—The U.D.C. passed plans: C. F. Day, Ltd., amended plan of shops, corner of Green-lanes and Tottenhall-road; C. D. Williams, amended plan of house, Hoodcote-gardens; C. E. Hartshorne, revised plan of three houses, Green Moor-link; F. F. Tomlin, amended plan of 10 houses, North Circular Arterial-road; C. S. Brown, amended plan of lay-out of 315 houses, Bowes-road, east of Bounds Green Brook; Watson & Hindsley, amended plan of factory and offices, Bounds Green-road; C. E. Hartshorne, amended plan of three houses with garages, Powys-lane; L. Carpenter, amended plan of house, Eversley-crescent; C. S. Brown, revised plan of 160 houses, continuation of Evesham-road, Shrewsbury-road, Maidstone-road and Tewkesbury-terrace; C. D. Williams, bungalow, Hoodcote-gardens; W. C. Leak & Sons, 10 houses with garages, Hoodcote-gardens, and six houses with garages, Green Moor-link; G. W. S. Ingram, two houses and garages, Woodland-way; C. E. Hartshorne, two houses and garages, Fordsgrove.

SOUTH MIMMS.—The R.D.C. has agreed to accept the offer of the Earl of Strafford of half-an-acre of land at the rear of the Council's depot in Mutton-lane, Potters Bar, subject to the consent of the M.H. This will enable the Council to utilise the frontage for building six parlour-type houses.

TYRONE.—The Strabane and Castlederg Regional E.C. has decided to ask the C.C. to negotiate a loan of £1,500 for the erection of the Bredy school.

WAKEFIELD.—The T.C. passed plans: The Wakefield Industrial Society, Ltd., two houses in Walton-lane, for A. Cranswick; Massie & Holdsworth, public house in Horbury-road, for Beverley Bros.; H. Dobson, two houses in Montague-street, for R. Schofield; H. Dobson, two houses in Thornes-road, for Rodgers & Berry; Miss B. Hill, two houses in Castle-road; W. H. Watson, six houses in Milnthorpe-crescent, for E. A. Carbert.

WHARFEDALE.—Plans approved by the R.D.C.: Two bungalows at Alwoodley, for B. Craven; bungalow, Alwoodley, for L. Nicholson; house, Bramhope, for W. Watson; bungalow, Tranmere, for K. Lecter; two bungalows, Hawksworth, for T. B. Moseley and L. S. Hardman; bungalow, Hawksworth, for R. Sykes; residence, Alwoodley, for C. R. Butler.

WINCHESTER.—The Housing Committee of the T.C. have recommended (1) That the St. Giles' Hill site be appropriated for the erection of 40 cottages as shown on the lay-out plan, 28 of such cottages to have two bedrooms, and 12 three bedrooms; (2) that the existing 33 hutments be demolished as soon as other houses can be built to take their place; and (3) that the Council give the Committee authority to obtain by public advertisement tenders for the immediate erection of the said 40 cottages.—The Council has also agreed that negotiations be entered into with Cancellor and Sawyer with a view to appointment as joint architects for the new school at Stanmore.

WORCESTER.—The City Council have been asked to accept a tender for £6,317 for the improvement of Worcester Cattle Market. The full cost of bringing the market up to date, including roads, water mains, and weighing machines, is estimated at £9,825.

NEW BUILDINGS IN LONDON

Camden Town.—REBUILDING.—The Governors of the Royal Veterinary College are about to rebuild their premises in Great College-street, N.W.1. Sanction has been received from the Lords of the Treasury to a grant from the Development Fund of a sum up to £35,000 in aid of the reconstruction scheme. No architect or builder has been appointed.

Chelsea.—OFFICES.—The Great Western Railway Co. are to provide office accommodation at Chelsea Basin, S.W.3.

Denman-street.—THEATRE.—A new theatre is to be built on a site in Denman-street, W.1, opposite the Regent Palace Hotel. The scheme is to cost £120,000 and Mr. Edward Laurillard has completed the financial arrangements in connection with the work.

Fleet-street.—PREMISES.—Messrs. Greenham, Ltd., have just carried out the demolition of 54, Fleet-street, E.C., where new premises are to be erected for the Marcus Estates, Ltd. Messrs. Trehearne & Norman, of Windsor House, Kingsway, W.C.2, are the architects.

Ilford.—ALTERATIONS.—Alterations to premises in High-road, Ilford, are being done by Messrs. Gaze & Sons, Ltd., for Messrs. H. A. White & Co. Messrs. Carter & Young, AA.R.I.B.A., of Kingston, are the architects. The constructional steelwork is by Messrs. Young & Co., 6, Queen Anne's Gate, Westminster.

Kingston-on-Thames.—WARD.—The Borough of Richmond (Surrey) and the Heston and Isleworth Urban District Joint Hospital Committee are inviting tenders for the erection of new ward block and other works at the Mogden Hospital. The architects are Messrs. Adams, Holden & Pearson, FF.R.I.B.A., 9, Knightsbridge, S.W.1.

Little Trinity-lane.—PREMISES.—New premises are now being erected in Little Trinity-lane, E.C., by Messrs. Trollope & Colls, builders, 5, Coleman-street, E.C. Messrs. Williams & Cox, 34, Henrietta-street, Covent Garden, W.C.2, are the architects for the scheme.

Oxford-street.—REBUILDING.—The last section of Messrs. Bourne & Hollingworth's premises in Oxford-street, W.1, are now being demolished. The builders are Messrs. F. G. Minter, Ltd., of Putney, and the architects are Messrs. Slater & Moberley, A. & F.R.I.B.A., of 46, Berners-street, W.1. The sub-contractors are the same as those for the first portion.

Thames Ditton.—HOUSES.—Messrs. M. Greenwood & Son, Ltd., Mordaunt-road, Harlesden, N.W.10, have purchased the Riversdale estate at Thames Ditton, which they propose to develop by erecting approximately 120 houses and bungalows on the site.

Watford.—MODERNISING.—The Metropolitan Asylums Board have approved the plans submitted by Mr. T. Cooper, Engineer-in-Chief, for the modernisation of Leavesden Mental Hospital, Abbots Langley, near Watford. Application is to be made to the Ministry of Health for their sanction to the scheme. The work is to cost £107,010, and no contracts have yet been let.

Wembley.—HOSPITAL.—The scheme for the erection of a new hospital at Wembley has now developed further by tenders being invited by public advertisements. The hospital will accommodate twenty beds. The architect for the scheme is Mr. H. Kenchington, A.R.I.B.A., of 44, Bedford-row, W.C.1. The hospital is to cost about £20,000.

Town Planning.

The Ministry of Health (Town-Planning Department) has issued the following supplementary list showing town-planning progress for the month ended December 31, 1926:—

Preliminary Statement approved (Stage II).
Gloucester.—Bristol T.C. (two areas).

Resolutions received (Stage I).
England.—Lancashire: Radcliffe U.D.C. Southampton: Eastleigh and Bishopstoke U.D.C. Sussex: Portslade-by-Sea U.D.C.
Wales.—Gramorgan: Cardiff R.D.C. (No. 6).

PRICES CURRENT OF MATERIALS

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 5 6
Second Hard Stocks	3 19 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at	2 13 3	Best Blue Pressed Staffs	9 5 0
King's Cross		Do. Bullnose ..	9 15 0
Do. grooved for Plaster	2 15 3	Blue Wire Cuts	7 5 0
Do. Bullnose ..	3 8 3		

Best Stourbridge Fire Brick:—

2½ in.	8 11 0	3 in.	10 3 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers	23 0 0	D'ble Str'tch'rs	31 10 0
		D'ble Headers	28 10 0
		One Side and two ends	32 10 0
		Two Sides and one End	33 10 0
Headers	22 10 0	Splays and Squints	31 0 0
Quoins, Bullnose and 4½in. Flats	29 10 0		

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	1 11	3 in. per yd. super	2 9
2½ in. " "	2 4	4 in. " "	3 6

	s. d.	
Thames Ballast	10 6	per yd.
Pit Sand	13 9	" "
Thames Sand	14 6	" "
Best Washed Sand	14 6	" "
½in. Shingle for Ferro-Concrete	12 9	" "
¾in. "	14 0	" "
¾in. Broken Brick "	11 6	" "
Pan Breeze	7 6	" "

delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test £2 18 0 to £3 3 6 51s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
" Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
" " White	3 12 6
" Fine	5 12 0
Sirapite, Coarse	3 9 0
" Finish	3 17 0
Grey Stone Lime	3 0 9
Chalk Lime	3 0 9
Best Ground Blue Lias Lime	2 13 6
Hair per cwt.	2 2 6
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 11½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4
Do. do delivered on road wagons at above stations, per ft. cube	4 5
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE—	
Delivered at any Goods Station, London.	s. d.
Random blocks from 10 ft. and over P. ft. cb.	17 0
Sawn two sides "	27 0
Sawn three or four sides "	32 0
YORK STONE, BLUE—*Robin Hood Quality.*	
Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per ft. super	5 6
6 in. rubbed two sides, ditto "	6 0
3 in. sawn two sides slabs (random sizes) "	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	1 6½
1½ in. to 2 in. ditto, ditto "	1 4
HARD YORK—	
Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5 1½
6 in. rubbed two sides, ditto "	6 1½
4 in. sawn two sides slabs (random sizes) "	2 10
3 in. ditto ditto "	2 1½
2 in. self-faced random flags Per yd. super	9 0

CAST STONE.

Delivered in London Area in full van loads, per ft. cube:—Plain, 6s. 6d.; Moulded, 9s. 6d. Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£28 0	3 × 6	£21 0
4 × 9	25 0	3 × 11	25 0
4 × 8	24 0	2 × 11	25 0
4 × 7	23 0	3 × 9	24 0
3 × 8	21 0	2½ × 9	23 0
3 × 7	20 0	3 × 4½	22 0
2½ × 7	20 0	3 × 4	22 0

PLANED BOARDS.

1 × 11	£27 0	1 × 9	£26 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	20/-	1¼	31/-
¼	22/-	1½	34/-
1	25/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.	Inches.	per sq.
1	25/-	¾	16/6
1¼	31/-	¼	19/-
1½	34/-	1	24/-

MATCHING (BEST).

Inches.	s. d.
Battens.	2 6 per 100 ft.

SAWN LATHS.

Per bundle	0 3 4

1" AND UP THICK.

	£ s. d.	£ s. d.
Dry Austrian Wainscoat, per ft. cube	0 16 0 to	0 18 0
Dry American and /or Japanese Figured Oak, ft. cube	0 15 0 to	—
Dry American and/or Japanese Plain Oak, ft. cube	0 11 0 to	0 13 0
Dry sq. edged Honduras Mahogany, ft. cube	0 16 0 to	0 18 0
Dry Log cut Honduras Mahogany, ft. cube	0 18 0 to	1 1 0
Dry Cuba Mahogany, ft. cube	1 4 0 to	1 10 0
Dry Teak, ft. cube	0 13 0 to	0 15 0
Dry American Whitewood, ft. cube	0 11 0 to	0 14 0
Best Scotch glue, per cwt.	4 10 0 to	—
Liquid Glue, per cwt.	4 7 0 to	5 10 0

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

	£ s. d.		£ s. d.
24 by 12	32 18 4	18 by 10	18 12 11
22 by 12	29 17 11	18 by 9	16 9 2
22 by 11	27 14 2	16 by 10	15 12 6
20 by 12	26 5 0	16 by 8	12 3 9
20 by 10	22 10 0		

TILES.

Delivered at London rate stations in full truckloads of not less than 4 tons. Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 12 6
Ditto hand-made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
" Stanchions	16 10 0
In Roof Work "	19 10 0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅜ in. to ¾ in.	10 15 0
½ in.	11 0 0	⅞ in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Black Gas	60 %	50 %	60 %
Galvanised Gas	45 %	40 %	50 %
Blue Water	55 %	45 %	55 %
Galvanised Water	38½ %	35 %	45 %
Red Steam	50 %	40 %	50 %
Galvanised Steam	32½ %	30 %	40 %

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3 in.	1/3½	11½d	3½d.
3½ in.	1/4½	1/1½	3½d.
4 in.	1/6	1/3	3½d.
4½ in.	1/7½	1/4½	4½d.
5 in.	1/10½	1/6½	5½d.

O.G. GUTTERS.

3 in.	1/8	1/4½	3½d.
3½ in.	1/8	1/4½	3½d.
4 in.	1/9½	1/4½	3½d.
4½ in.	1/11½	1/7½	4½d.
5 in.	2/4½	1/10½	5½d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/10½	1/3	1/9½
2½ in. "	2/0½	1/4½	2/1½
3 in. "	2/6	1/9	2/7½
3½ in. "	2/11½	2/0½	3/0½
4 in. "	3/5	2/6½	3/8½

L.C.C. COATED SOIL PIPES—London Prices, ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6 fts. plain	3 3	2 4½	2 10
2½ in. "	3 9	2 7½	3 7
3 in. "	4 6	2 10	4 2½
3½ in. "	4 11½	3 7	4 11½
4 in. "	5 5½	4 0½	5 9

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9 ft. lengths	4 4	5 1	8 0½
4 in. " "	6 2	5 8	10 0
5 in. " "	7 2	10 10	17 1
6 in. " "	8 6	13 2	21 9

Gaskets for jointing, 38/6 per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	13 0 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 5 0	..	15 5 0
Staffordshire Marked Bars	16 5 0	..	17 5 0
Mild Steel Bars	10 0 0	..	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	..	11 0
Hoop iron, basis price	12 0 0	..	13 0 0
" Galvanised	27 0 0	..	28 0 0
Soft Steel Sheets, Black—			
Ordinary sizes to 20 g.	13 5 0	..	14 5 0
" " " 24 g.	14 5 0	..	15 5 0
" " " 26 g.	16 5 0	..	17 5 0
Sheets Flat Best Soft Steel, O.R. & O.A. quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0	..	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18 10 0	..	20 10 0

No. 1 quality £4 per ton extra.

Flat and Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 10 0	..	19 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	19 0 0	..	20 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	22 0 0	..	23 0 0
Sheets Galvanised Flat, Best quality—			
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	..	26 10 0
Cut Nails, 3 in. to 6 in.	19 0 0	..	20 0 0

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	39 10 0
Pipe in coils	41 0 0
Soil Pipe	43 0 0
Compo Pipe	44 0 0

NOTE—Country delivery, 30s. per ton extra lots under 3 cwt., 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	27 10 0	—
Do., ex country, carriage forward per ton	28 10 0	—

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1
Strong sheet "	1 0
Thin "	1 1
Copper nails	2 3
Copper wire	2 4

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62/-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.

½ in.	¾ in.	1 in.	1½ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.
8 lbs. P. traps	33/-	41/-	56/-	101/- per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/- "

TIN—English Ingots, 2/10 per lb. SOLDER—Plumbers 1/3, Tinmen's 1/6, Blowpipe 1/7 per lb.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil,	in pipes per gallon	0 3 0
" " "	in barrels "	0 3 1
" " "	in drums "	0 3 3
Boiled " "	in barrels "	0 3 3
" " "	in drums "	0 3 6
Turpentine	in barrels "	0 5 0
"	in drums (10 gall.) "	0 5 2
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		50 15 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered		70 5 0
Red Lead, Dry (packages extra)	per ton	42 0 0
Best Linseed Oil Putty	per cwt.	0 15 0
Filocol	"	0 15 6
Size. XD Quality	ffkn	0 3 0

Continued on next page.

*The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS (*contd.*).

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per ft.		Per ft.
15 oz. fourths ..	3½d.	32 oz. fourths	7½d.
15 „ thirds	4½d.	32 „ thirds	9½d.
21 „ fourths ..	4½d.	Obscured Sheet, 15 oz...	3½d.
21 „ thirds	5½d.	„ 21 „ ..	5½d.
26 „ fourths ..	5d.	Fluted 15 oz. 6½d., 21 oz.	9½d.
26 „ thirds	7½d.	En'lled 15 oz. 5½d., 21 oz.	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4½d.
⅛ Rough rolled	5½d.
¼ Rough rolled	6d.
Figured Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White..	6½d.
Ditto, tinted	9½d.
Rolled Sheet	6½d.
White Rolled Cathedral	6½d.
Tinted Do.	8½d.

Cast Plate is same price as rough rolled.

VARNISHES &c.

		Per Gallon. £ s. d.
Oak Varnish.....	Outside	0 14 0
Fine ditto.....	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best ditto.....	ditto	1 12 0
Floor Varnish	Inside	0 13 0
Fine Pale Paper	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 6
Hard Drying Oak	ditto	0 18 0
Fine Hard Drying Oak.....	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 6
Best Black Japan		0 10 6
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black.....		0 7 6
Berlin Black.....		0 14 6
Knotting (patent)		1 5 0
French and Brush Polish		0 17 0
Liquid Dryers in Terebine		0 9 0
Cullass Black Enamel		0 7 0

Northumberland and Durham Master Plumbers.

At the annual meeting of the Northumberland and Durham Master Plumbers' and Domestic Engineers' Association, at the Central Station Hotel, Newcastle, on January 7, Mr. G. A. Moore was unanimously elected President for the ensuing year. Other officials appointed were: Vice-president, Mr. Luke B. Scott; hon. treasurer, Mr. Robert Law; hon. secretary, Mr. Robert Kirkland; secretary and financial secretary, Mr. John C. Graham, junr.; while the following were elected to the general committee to fill vacancies caused by retiring members: Messrs. J. Graham, W. B. Aynsley, A. Watt, J. B. Bilton, and W. C. Sawyer. The annual dinner was held on the same date, and was attended by a large gathering of members of the plumbing and allied trades. Mr. Moore presided, and those present included the Lord Mayor of Newcastle, Councillor A. W. Lambert; the Sheriff, Councillor R. S. Dalgleish; Mr. W. F. Thacker, ex-President of the Institute of Plumbers; and Mr. H. Blackman, secretary of the National Federation of Plumbers.

Midland Bank Maps.

The Midland Bank, Ltd., has just issued a new edition of the maps of its own branches and those of affiliated banks. These maps are folded and bound in a cover of pocket size, and are prepared for the convenience of customers and the use of the staff. In addition to the principal map, covering the whole of the United Kingdom, there are numerous insets in which are indicated the detailed situation of branches in important provincial centres and districts, as well as large-scale maps of Central London and of London and the suburbs, showing not only the offices of the Bank, but principal thoroughfares, railway stations, and important landmarks.

World's Biggest Bridge.

A special train was used to transport from Darlington to Middlesbrough Docks two of the biggest bearings ever known to engineers. The bearings, which are 24 ft. square and weigh 300 tons each, will be shipped to Australia to hold a span 1,600 ft. long, of the Sydney Harbour Bridge, which, when completed, will be the largest in the world.

THE SCOTTISH BUILDER

NEW BUILDINGS IN SCOTLAND

Dundee.—IMPROVEMENTS. — The question of the construction of the east wing to the Caird Hall-square has been considered by a Works Sub-Committee of Dundee Town Council. It has been mentioned that the cost of the entire central improvement scheme at the Caird Hall and neighbourhood will be between £300,000 and £500,000.

Aberdeen. — HOUSES. — The Housing Committee of the Town Council recommended that the scheme for the erection at Hilton and Cattofield of 1,000 houses be proceeded with. The average cost per house has been worked out at £391 5s. 4d.

Cockburnspath.—IMPROVEMENT.—The Eastern District Committee of Berwickshire County Council has reported that the scheme for the alteration and improvement of the Tower Bridge and roadway at Cockburnspath will involve an outlay of £24,000.

Portobello. — EXTENSIONS. — A Provisional Order is to be promoted by Edinburgh Town Council in connection with extensions and improvements at Portobello Electric Power Station. One of the proposals is the construction of a pier to carry outlet pipes, and provision is also to be made for a bathing pond. The total cost of the scheme is estimated at about £100,000.

Glasgow. — INFIRMARY. — At the Glasgow Royal Infirmary meeting it was mentioned that plans were being prepared for the erection of the auxiliary hospital at Canniesburn which is to be used as an annexe to the Royal Infirmary.

Edinburgh.—SCHOOL.—The Edinburgh Merchant Co. Education Board has decided to acquire Merchiston Castle School and its boarding houses and playing-field, and it is estimated that the cost of the new school, including the site and the alterations and extensions necessary will amount to approximately £200,000. The present Merchiston Castle School will be used as a junior school, accommodating between 500 and 600 pupils, and a new school is to be erected on the playing field to accommodate about 900 pupils.

Obituary.

The death has occurred of Mr. James Masterton, builder, at Rowanbank, Biggar.

Edinburgh Stained Glass for America.

An American visitor, who has been attracted by examples of church stained glass in Edinburgh by Mr. James Ballantine, F.S.A., has commissioned him to design and execute a large three-light window for St. Michael's Church, Milton, Massachusetts, U.S.A.

Memorial Window to the late Duke of Buccleuch.

The Bishop of Edinburgh has dedicated two windows in St. Mary's Episcopal Chapel, Dalkeith, to commemorate William Henry Walter, sixth Duke of Buccleuch, who died in 1914, and Walter Henry, Earl of Dalkeith, who was killed while shooting at Achnacarry, Inverness-shire, in 1886. One window has a portrait study of the late Duke in the robes of the Order of the Thistle, and the other window depicts the late Earl of Dalkeith in the uniform of the Royal Company of Archers. Mr. A. K. Nicholson, of London, prepared the windows according to the style of mediæval glass.

Bronze Age Cairn in Dumbartonshire.

A discovery has recently been made by workmen near Bowling, Dumbartonshire. In the course of digging, they disclosed a circular area, obviously artificial, covered by a setting of rough stones, when it became clear that the remains were the foundation of a round cairn of the Bronze Age, probably some four thousand years old, and long ante-dating the Roman fort on the Antonine Vallum situated a few hundred yards to the south-east. The central stone structure has a diameter of 41 ft.; but the sacred area apparently extended to a diameter of 60 ft.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons' Bricklayers' Plasterers'.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria.....	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3
Bathgate	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge.....	1/8	[illegible]	1/8	1/8	1/8	—	1/6½	1/3 to 1/3½
Dumbarton	1/8	[illegible]	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Dunfermline	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William.....	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Greenock	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Hawick	1/7	1/7	1/7	1/7-1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½
Inverness	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/- to 1/2
Kilmarnock	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkcaldy	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkwall.....	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/0 to 1/3
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Motherwell.....	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Stirling	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Stirlingshire (Eastern District)	1/8-1/10	1/8 1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
Whitshaw	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 97.)*

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	38	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	32	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	8	6
½ inch on flats in two thicknesses	" "	6	3
Angel fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	20	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails	per square	72	9
Do 20 in. × 10 in. Do. Do.	"	80	9
Do. 24 in. × 12 in. Do. Do.	"	90	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	0
Do. joists	" "	5	6
Do. roofs, floors, and partitions	" "	6	0
Do. trusses	" "	8	6

		¾"	1"	1¼"	2"
Deal rough close boarding	per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		44/6	53/-	60/6
Do. tongued and grooved	"		49/-	57/6	65/-
Do. matchings	"	45/-	51/-		
Moulded skirting, including backings and grounds	per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.		s.	d.
One-and-a-half moulded sashes or casements	per foot super.	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.		1½"	1¾"	2"
Two-panel square framed	per ft. sup.	2/1	2/4	2/6
Four-panel Do.	"	2/5	2/8	2/11
Two-panel moulded both sides	"	2/8	2/11	3/2
Four-panel Do. Do.	"	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.			s.	d.
Deal wrot moulded and rebated	per foot cube		14	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers	"	1/4	1/6	1/9
Add if cross-tongued	"	2d.	2d.	2d.

STAIRCASES.	1"	1¼"	1¾"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail: average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).			
6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints	ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do.	"	1/9	2/-	2/6	3/3
Rain-water pipes with ears	"	1/9	2/7	—	—
Extra for shoes and bends	each	4/4	5/11	—	—
Do. stopped ends	"	1/11	2/4½	3/7	4/-
Do. nozzles for inlets	"	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	53	6
Do. Do. in flats	"	52	6
Extra labour and solder in coated cesspools	each	6	0
Welf joint	per ft. run	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service	"	1/8	2/2	2/7	3/10	—	—
Do. soil	"	—	—	—	—	—	6/9
Bends in lead pipe	each	—	—	—	—	3/3	8/2
Soldered stop ends	"	1/2	1/8	2/1	2/10	3/6	—
Red lead joints	"	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints	"	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws	"	—	—	—	14/7	19/6	—
Bib cocks and joints	"	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints	"	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	4
Do. Do. Sirapite	" "	2	9
Do. Do. Keen's	" "	4	0
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	6
(Not including hangers or runners, &c., for suspended ceilings.)			
Portland cement screed	per yard sup.	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	8½
26 oz. Do.	" "	1	0
Obscured sheet	" "	1	1
⅛ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	10½
¼ in. wired cast plate	" "	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10 % on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TRADE NEWS

New Asphalt Yard.

Messrs. W. Smith, Stodart & Son, the old-established asphalt contractors, have opened a new yard at Deptford to cope with their increasing business on the south side of the river.

Architects' and Builders' Stationery.

Messrs. J. C. King, Ltd., of 42, Goswell-road, E.C.1—a firm who specialise in architects', surveyors' and builders' stationery—inform us that their list "No. 60," fully illustrated and devoted to all requirements in the way of stationery for the profession and trade, is now in the press, and will be ready in about four weeks' time. Any reader requiring a copy should send a post card to the above firm, naming list "No. 60."

Partition Bricks.

The whole of the sanitary fittings used in Messrs. Wrigley, Jr., & Co.'s new factory at Wembley (illustrated in our issue of Jan. 7), and also the partition bricks which were of the registered "Shepwood" type, were supplied by the Leeds Fireclay Company, Ltd., of Wortley, Leeds.

New Brick and Tile Showrooms.

Messrs. W. T. Lamb & Sons are shortly opening extensive new showrooms at 43, Shoe-lane (Holborn-circus), E.C.4, where facing-bricks, tiles and slates have been built up to assist architects and builders to visualise better these materials in the work. Practically every type of brick and tile is shown, and the firm is to be congratulated on its enterprise in providing so useful a display. Fireplaces have also been built of their "Antique" briquettes, and we understand that a catalogue of fireplace designs suitable for constructing with these briquettes is in course of preparation. All interested in building should make a point of visiting these showrooms.

Concrete Mould Oils.

Of interest to trades engaged in concrete building are the two qualities of concrete mould oils manufactured by Messrs. Sterns, Ltd., Royal London House, Finsbury-square, E.C.2. Sterns' "Glycetol" concrete mould oil is a light pale oil which ensures a smooth even surface to concrete work, as it prevents the concrete adhering to the shutterings, moulds, &c. This grade is particularly suited for the rougher types of work, such as large sea walls, retaining walls, &c. Sterns' "Cretol" stainless mould oil is absolutely stainless in use. It leaves an absolutely clean white finish on the removal of the shutterings or moulds. Readers who are having difficulty with their concrete shutters or moulds should apply to Messrs. Sterns, Ltd., who will be glad to give them information and advice.

A Flood-Lighted Church Interior.

The system of lighting installed in St. Cuthbert's Church, Philbeach-gardens, S.W.5, is indicative of the increased demand for electricity for church lighting. Details of the installation are of interest. Ten "Gecoray" floodlight projectors, each equipped with 200-watt white Osram gas-filled lamps, illuminate the nave, being fixed at clerestory level, about 40 ft. from floor level. The chancel, reredos, and Lady Chapel are similarly illuminated. Illumination of the aisle is by ten similar but less powerful units, employing 100-watt white Osram lamps, five being fixed on either side, at about 24 ft. from floor level. Though a flood-lighting scheme, it may be styled concealed lighting, as all the projectors point in one direction—away from the congregation—towards the chancel, and therefore are without glare, and far above the line of vision. The General Electric Co., Ltd., Magnet House, Kingsway, W.C.2, prepared the scheme, in collaboration with Mr. S. Theo. Puzey, P.A.S.I., M.R.San.I.

Watertight Fittings for Incandescent Electric Lamps.

This specification (No. 97—1926), which is a revision of the 1920 edition, applies to fittings of the Bulkhead and Well-Glass Types for use in conjunction with British Standard Lamps (B.E.S.A. Specification No. 161), having an overall length not exceeding 150 mm. and 140 mm. respectively. The General Clauses deal with the material, finish of material, wire entry, earthing screw and lampholder, whereas the Sectional Clauses deal mostly with dimensions, packing rings and gauging. The general construction is now left in the hands of the manufacturer, who can thus work to his own design within the limits imposed by the dimensions necessary for interchangeability. These dimensions are clearly shown on a series of drawings covering several types of bulkhead and well-glass fittings.

Copies of this new Specification may be obtained from the B.E.S.A. Publications Department, 28, Victoria-street, S.W.1, price 2s. 2d., post free.

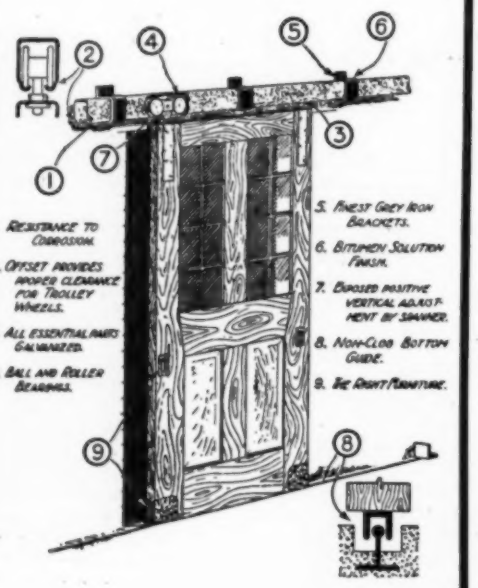
Mersey Tunnel Scheme.

The Liverpool Finance Committee, who have received from the Ministry of Transport an intimation that no additional money from the Road Fund will be available for the Mersey Tunnel scheme, is said to have recommended the City Council to petition against Birkenhead's bill. The Birkenhead representatives on the Mersey Tunnel Joint Committee have given comparative figures showing the relative costs of the Woodside, Rendel-street, and Pool-street proposals for the Birkenhead entrance to the tunnel, in which they point out that the cost of constructing an entrance at Woodside, according to one design by Mr. J. A. Brodie (one of the joint engineers), would be £1,131,260, as compared with £1,174,000 for the proposed entrance at Pool-street, and £990,000 for the works at Rendel-street. "If the question of costs is to be the determining factor," they state, "the Birkenhead Corporation have no difficulty, within the limits of deviation to be authorised by the present bill, in providing an adequate entrance at a cost approximately equal to that for the 'inadequate' proposal for Woodside."

SLIDING DOOR GEAR

FOR FACTORIES, GARAGES, SCHOOLS, ETC.

Nine essential features of The "Henderson" System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5. FINEST GREY IRON BRACKETS.
6. BITUMEN SOLUTION FINISH.
7. EXPOSED PARTS VERTICAL ADJUSTMENT BY SPANNER.
8. NON-CLOG BOTTOM GUIDE.
9. RE-RIGHT FURNITURE.

WRITE FOR BOUND CATALOGUE B26 TO

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TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ADWICK-LE-STREET.—108 houses in Doncaster-lane, for the U.D.C. Surveyor, Village-street:—

*H. M. Nowell, Stockton-on-Tees	£52,474 6

BARKING.—Transformer station at Creeksmouth, for the U.D.C. Mr. R. A. Lay, Public Offices, East-street:—

Hy. Newell, Poplar	£425 0
W. J. Cearns, Stratford	402 0
Myall Bros., Ilford	375 0
*G. A. Ball, Barking	325 10

BARNET.—Fifteen houses on the Bell's Hill Nursery estate, for the U.D.C. The Surveyor, Council Offices, Wood-street:—

R. E. Nevard, Harrow-on-the-Hill	£10,029
A. T. Rowley, Tottenham	9,895
O. P. Drever & Sons, Kettering	8,111
David W. Beck, London	8,051
Turner & Payne, North Finchley	8,000
*Pettengell & Clark, Hitchin	7,748

BARNET.—Ten parlour-type and 32 non-parlour type houses at Shenley-road, Boreham Wood, three non-parlour type houses at Green-street, Shenley, and four non-parlour type houses at Ridge, for the R.D.C.:—

*A. Cole, Ltd., Luton	£22,337

BIRKENHEAD.—Electric transformer station on land fronting Church-street, Moreton, for the Corporation. Mr. C. Brownridge, Borough Engineer and Surveyor. Quantities by the Borough Engineer and Surveyor:—

*Jones & Hough, Heswall	£831

BLACKPOOL.—Rebuilding of the boundary wall and conveniences at the cemetery, for the C.B.:—

*Hogarth & Pollard, Ltd.

BLACKPOOL.—Alterations and partial rebuilding of 28, Clifton-street, for Madame Altman. Mr. Halstead Best, F.R.I.B.A., architect, 8, Clifton-street:—

*Atherton Bros., Blackpool.

BOLTON.—Rebuilding St. George Hotel, for Messrs. Swales & Co., Ltd. Mr. N. H. Hacking, architect, 5, Blackfriars-street, Manchester:—

General contractor—*C. H. Pearse, Bolton.
Terra-cotta work—*Hathern Station Brick and Terra Cotta Co., Loughborough.

BRIDLINGTON.—Residence on First avenue, Sands Cottage estate, for Mr. W. Patchett. Mr. F. Vaux, F.R.I.B.A., architect, 29, Quay-road:—

Bricklayer, plasterer, carpenter and joiner—

*F. Spink	£1,048 12 6

Plumber, glazier, electrician—

*W. Carr	139 0 0

Tiler—

*W. Dodgson	100 0 0

(All of Bridlington.)

BRIGHTON.—Excavation and foundation of the new Carter's Stores, 163, Western-road. Mr. A. J. McLean, F.R.I.B.A., 3, Palace-place:—

Packham, Sons & Palmer	£1,020
W. & A. Elliott, Ltd.	1,020
Barnes	970
Field & Cox	874
Lynn & Son	847
*Saunders's	772

BRIGHTON.—Reconstruction of the outfall sewer, and the construction of a sea wall and groyne at Portobello, for the Brighton Intercepting and Outfall Sewers Board:—

*J. Gill Contractors, Ltd., London	£66,023

BURNLEY.—Eight houses abutting upon Kiddrow-lane, for the C.B.:—

*Kelshaw & Lee	per house £568 2 6

CALLINGTON.—Twelve non-parlour type houses in Launceston-road, for the U.D.C.:—

*C. B. James, Callington	£4,439

CANTERBURY.—Ninety-eight non-parlour three-bedroom, semi-detached houses at Thanington, for the T.C. Mr. P. H. Warwick, City Surveyor and Engineer:—

*R. P. Davis, Margate	£41,886

CARNFORTH.—Twenty-four non-parlour houses in pairs. Mr. F. Holt, surveyor:—

*C. Hodgson, Lancaster.

DEPSWADE.—Four houses at Hempnall, for the R.D.C.:—

*R. G. Carter, Drayton	£1,088

DONCASTER.—New salvage and destructor buildings at The Holmes, for the T.C.:—

*Heenan & Froude, Ltd.	£19,850

DUNBLANE.—Widening of Dunblane Bridge, for the Western District of the Perthshire C.C.:—

Masonry work—	
*J. Cramb	£618
General work—	
*Gray's Ferro-Concrete Co.	1,586

DUNSCROFT.—New elementary school, for th West Riding C.C. :—
*A. Storey, Doncaster.

EAST HAM.—Twenty-six double tenement houses, and 12 single tenement houses, on the Central Housing site, for the C.B. :—
‡Johns Bros. £37,989 14 9

EAST SUFFOLK.—For (*a*) new junior Council school at Maidstone-road, Felixstowe, and (*b*) enlargement of Mills Grammar School for Girls, Framlingham, for the E.C. Mr. J. Webb, Surveyor of County Buildings, County Hall, Ipswich. Quantities by Messrs. Parmenter & Caston, Ipswich :—
(*a*)*Parker Bros., Felixstowe..... £5,548 9
(*b*) *Wm. C. Reade, Aldeburgh.... 2,489 0

ELY.—Houses in the following parishes, for the R.D.C.—Haddenham, 12; Sutton, 8; Witchford, 4; Stretham, 8; and Wilburton, 6. Mr. H. F. Wykes, architect, Downham-road :—

	Per pair.
Bath-room type—Sutton	
*J. S. Prior, Sutton, near Ely.....	£718 10
Witchford—	
*E. M. Allen, Witchford, near Ely..	698 10
Non-bathroom type—Haddenham—	
*M. Canham, Somersham, Hunts.....	693 0
Stretham—	
*M. Canham, Somersham, Hunts.....	736 10
Stretham and Wilburton—	
*F. Tucker & Sons, Ely.....	735 0

FAIRBURN.—Extensions to the elementary Council school, for the West Riding C.C. :—
*F. Tree.

GRIMSBY.—Maternity home at Nunsthorpe, for the T.C. :—
*Steele & Goddard, Grimsby..... £2,777 5

GRIMSBY.—Tiling and other work at the baths, for the T.C. :—
*G. H. Hipkin, Grimsby..... £198 12 8

GUILDFORD.—Fencing of the 170 houses on the Aldershot-road estate, for the T.C. :—
*Skelton & Kirby..... £148 19 2

HALIFAX.—Fourteen houses, for the T.C. :—
Masons and bricklayers—*H. Mortimer & Son for two blocks and *O. Watson for one block.
Carpenter and joiner—*E. Johnson.
Slaters—*Pickles Bros.
Plasterer—*Eagland Marshall.
Painter—*F. A. Round.
Plumber and glazier—*J. H. Boocock.
Electricians—*J. Harrison & Co., Halifax.
Lay-out—*L. Mortimer.

HALIFAX.—156 houses at Bracewell Farm, for the T.C. :—
Masons—
*Crossley & Radcliffe, Halifax..... £30,810
Joiners—
*J. H. Naylor & Son, Halifax..... 9,523
Slaters—
*J. Bancroft & Son, Halifax..... 8,050
Plumber—
*J. Holdsworth, Halifax 6,385

HALIFAX.—Fifty-eight houses at Nursery-lane, for the T.C. :—
Masons—
*Pickles Bros., Halifax £11,890
Joiners—
*Sutcliffe & Addison, Mytholmroyd.. 3,480
Slaters—
*J. Bancroft & Son, Halifax..... 3,332
Plumber—
*F. Stocks, Halifax 2,300

HALIFAX.—Electrician's work on the housing sites at Bracewell Farm, Nursery-lane No. 3, and Nursery-lane (Ovenden Cross) No. 4, for the T.C. :—
*Bairstow Bros., Leeds—
Bracewell Farm £674 14
Nursery-lane No. 3 ..... 250 17
Do. No. 4 ..... 256 13

KING'S LYNN.—Beet sugar factory at King's Lynn :—
*Fawcett, Preston & Co., Ltd., Liverpool.

LEEDS.—Pavilion and convenience in Potternewton Park, for the T.C. Mr. W. T. Lancashire, City Engineer :—
*Cooper & Silversides, Leeds.... £378 12 6

LEEDS.—Electricity sub-station in the grounds at Weetwood Hall, for the University Board :—
*Armitage & Hodgson, Ltd.

LEEDS.—New bridge at the entrance to the Wellington Station, for the L.M.S. Rly. Co. :—
*Armstrong Whitworth & Co., Ltd.

LIVERPOOL.—Alterations and additions to the Calder High School, Calderstones-road, for the T.C. Mr. A. D. Jenkins, Land Steward and Surveyor. Quantities by Mr. J. E. Bladon :—
*R. H. Green, Liverpool.

LIVERPOOL.—Additions to the Lisburn-lane Council School, for the T.C. Mr. A. D. Jenkins, Land Steward and Surveyor. Quantities by Mr. E. Ivor Cule, Liverpool :—
*J. A. Milestone & Son, Ltd., Wallasey.

LONDON.—Building for disinfector at the Goldie Leigh Homes, for the M.A.B. :—
E. Proctor & Sons, Plumstead..... £489
Burnand & Pickett, Ltd., Wallington.. 340
‡J. Hocking & Co., Charlton..... 274

LONDON.—Additional lavatory accommodation at the Hackney Casual Ward, for the M.A.B. :—
C. H. Boyd & Son, Ltd..... £363 0
W. Simms 350 0
J. Darch, Ltd. 350 0
Burnand & Pickett, Ltd. 349 0
A. C. Mackinlay 328 10
J. Crewdson 322 0
‡J. Hocking & Co. 289 0
(All of London.)

LONDON.—Isolation accommodation at the Grove Hospital, for the M.A.B. :—
H. J. Edgar £6,500 0
W. J. Marston & Son..... 5,972 0
E. Proctor & Sons 5,288 0
A. H. Sheppard 5,188 16
Burnand & Pickett, Ltd. 4,934 0
C. H. Boyd & Son, Ltd..... 4,732 0
‡J. Crewdson 4,571 0
(All of London.)

LONDON.—New bathrooms to sick staff wards A and B, at the South-Western Hospital, for the M.A.B. :—
E. Proctor & Sons 750 0
C. H. Boyd & Son, Ltd. 632 0
W. T. Green..... 629 19
A. H. Sheppard 620 0
J. Darch, Ltd. 597 10
W. Simms 565 0
L. Kazak 550 0
Blyth, Ltd. 544 0
J. Crewdson 480 0
Burnand & Pickett, Ltd. 435 0
‡T. Carrington & Co., Ltd..... 375 0
(All of London.)

LONDON.—Sisters' home at the South-Western Hospital, for the M.A.B. :—

	Tile edging to paths.	Artificial stone edging.
W. T. Green	£9,264 19 0..	£9,232 19 0
E. Proctor & Sons	8,258 5 7..	8,295 3 2
W. Harris, Ltd.	7,726 0 0..	7,746 0 0
Blyth, Ltd.	7,548 0 0..	7,587 0 0
C. H. Boyd & Son, Ltd.	7,342 0 0..	7,372 0 0
Burnand & Pickett, Ltd.	7,211 0 0..	7,233 0 0
J. Crewdson	7,125 14 6..	7,144 19 11
W. Simms	6,875 0 0..	6,896 0 0
Canonbury Construction Co., Ltd.	6,522 0 0..	6,546 0 0
L. Kazak	6,493 0 0..	6,507 0 0
T. Carrington & Co., Ltd.	6,138 0 0..	6,161 0 0
‡W. S. Sharpin	5,958 0 0..	5,980 0 0

(All of London.)

LYMM.—Twenty houses on a site at Pepper-street for the Council. Mr. D. Mort, engineer :—
*H. Thomason & Son, Lymm..... £8,958

MAIDSTONE.—Sixteen houses on the land at the corner of Hackney-road and Upper Fant-road, for the T.C. :—
*E. H. Wood—Eight..... £3,371 0 0
*R. Lawrence & Son—Eight.. 3,456 17 6

MAIDSTONE.—Four houses on the allotment site at The Street, Bearsted, for the R.D.C. :—
Elmore & Son £1,968
R. Lawrence 1,776
Ovenden Bros. & Hughesman 1,715
A. Burren 1,680
*G. Pearce & Sons..... 1,593

MALDON.—Six bungalows in pairs at the Endway, Mayland, for the R.D.C. Mr. Wm. Almond, surveyor, 6, Market Hill :—
*J. E. Smith, Burnham-on-Crouch.... £2,473
(Subject to the approval of the M.H.)

MANCHESTER.—Road from Church-lane, Harpurhey, to Thorpe-road, for the Corporation. City Engineer :—
*W. H. Worthington, Ltd., Manchester, £65,725

MORECAMBE.—House in Devonshire-road, for Mr. and Mrs. S. M. Brear. Mr. R. Dobson, architect, 22, The Crescent. Quantities by Messrs. Richard Dobson :—
Brickwork, &c.—
*H. Hillman & Sons.
Carpenter and joiner—
*A. E. Dent.
Tiler and plasterer—
*C. Mather.
Plumber and glazier—
*W. Gough.
(All of Morecambe.)

NEWCASTLE-ON-TYNE.—Block of business premises at High Bridge. Mr. M. K. Glass, architect, 20, Saville-road :—
*W. Hall, Gateshead.

NORMANTON (YORKS).—Electric lighting installation to 84 houses on the Hanson House estate, for the U.D.C. :—
*Fairey & Goodenough £660

NORMANTON (YORKS).—Eighty-four houses on the Hanson House estate, for the U.D.C. :—
*A. Bull & Co., Ltd..... £36,590 8

NORTH WESTMORLAND.—Water supply scheme in North Westmorland :—
Laying 60 miles of pipe line—
*David Thomson & Son, Carlisle.
Reservoirs—
*Hall & Busfield, Leeds.
Total cost £51,890

OXFORD.—General repairs on the farm, for the T.C. :—
*J. H. Tucker £209 10

PLYMOUTH.—Fifteen flats at the corner of Battery-street and George-place, Stonehouse, for the C.B. :—
*Plymouth Builders £6,825

PLYMOUTH.—Additional room at the Old Guildhall, for the C.B. :—
*C. J. Russell..... £258

PLYMOUTH.—Repairs to premises, for the C.B. :—8 and 9, North-street—
*W. Richardson £162 0
12 Moon-street and demolition of 13 and 14 Moon-street—
*F. G. Nicholls 116 10

PLYMOUTH.—Alterations to Victoria-road school, for the C.B. :—
*Pearn Bros. £405

PLYMOUTH.—Repairs to 23, Willow-street, for the C.B. :—
*W. Richardson £178

PLYMOUTH.—Provision of the lavatory block at Didworthy, for the C.B. :—
*Cranch & Son £1,022

PLYMOUTH.—Thirty-six flats on the Mount Stone, Stonehouse, for the C.B. :—
*A. N. Coles & Son, Ltd., Plymouth.. £17,116

PONTEFRACT.—Conversion of library into the "Open Access" system, for the T.C. :—
*Josh & Depledge.

PORTSMOUTH.—Extension of factory, Southsea, for Portsmouth Ice Co., Ltd. Mr. H. J. Dyer, chartered architect and quantity surveyor, 44, Victoria-road North, Southsea :—
Tanner Bros., Southsea £4,800
John Lay & Co., Portsmouth..... 4,784
G. J. Davis & Son, Southsea..... 4,396
Jno. Croad, Portsea 4,371
E. & A. Sprigings, Stamshaw 4,314
*F. J. Privett, Southsea 4,277
Saml. Salter, Southsea..... 4,227

ROCHDALE.—Electric lighting and power installation to 238 houses on the Dickens Green housing estate, for the Corporation. Borough Surveyor :—
*The Directo Electric Services (Bury), Ltd.

ROCHDALE.—Cinema in Yorkshire-street, Heybrook, for the Savoy Pictures (Rochdale), Ltd. Mr. Arthur Travis, architect, Union Bank Chambers, Rochdale :—
*T. & J. Foster, Ramsbottom.

ROMFORD.—Alterations and additions to the "Mawneys Arms," for Messrs. Ind Coope & Co., Ltd., brewers. Messrs. Banks-Martin, Hammond & Co., architects, 40, High-street :—
W. J. Maddison, Ltd., London.. £2,557 0
T. Lowe & Son, Burton-on-Trent 2,342 0
Luton & Son, London..... 2,324 0
R. Woollaston & Co., Bow..... 2,314 14
A. Monk, Edmonton..... 2,240 0
J. Flaxman & Sons, Ltd., Southend 2,225 0
H. E. Jerram, East Ham..... 2,105 0
Baker, Hammond & Laver, Ltd., Rainham 2,000 0
*H. Potter, Chelmsford 1,997 0

SALFORD.—230 lineal yards of wrought-iron railing required for fencing in connection with Scheme No. 3 on the Littleton-road housing estate, for the City Council :—
*W. A. Parker & Co., Workington.. £158 15

SITTINGBOURNE.—For extensions, for the Co-operative Society :—
*E. Bishop & Sons..... £7,936

SOUTHWOLD.—Strong room at the rear of the Town Hall, for the T.C. :—
*C. N. Field £122 2 6

STOCKPORT.—Public conveniences (*a*) near Cheadle Heath Station, and (*b*) at the Edgeley tram terminus, for the T.C. :—
*Hibbert & Penn....(*a*) £426; (*b*) £453

STOCKTON-ON-TEES.—Thirty semi-detached houses, type B3, on the Blue Hall estate, Norton, for the T.C. Mr. Geo. C. Mitchell, Borough Engineer :—
*A. McLeod, Thornaby-on-Tees..... £12,450

TARPORLEY.—Erection of the Arderne Institute, for the Cheshire E.C. Mr. F. A. Browne, F.R.I.B.A., architect, Newgate-street, Chester :—
*J. G. Davies & Co., Frodsham....., £2,989

TORQUAY.—Concrete platform and steps at Beacon Cove, for the T.C. :—
*W. H. Smith, Torquay..... £1,935 2

TORQUAY.—Extension of the refreshment buffet on the bathing platform, for the T.C. :—
*F. Stanbury, Torquay £1,529

TUNBRIDGE WELLS.—Shop premises, Calverley road, Tunbridge Wells, for Messrs. Marks & Spencer Ltd. Mr. H. Elwig, L.R.I.B.A., architect, St. Pierre, Mount Ephraim-road. Quantities by Messrs. Butler & Elwig :—
Huggett & Bridger, Tunbridge Wells £8,422 0 0
Boodwin Bros., Tunbridge Wells..... 7,917 0 0
H. & J. Taylor, Hastings and London 7,695 16 9
Jarvis, Ltd., Tunbridge Wells 7,495 0 0
Bates & Sons, Ltd., Tunbridge Wells 7,208 0 0
Strange & Sons, Ltd., Tunbridge Wells 7,288 0 0
Bovis, Ltd., London..... 7,257 0 0
Beale & Sons, Tunbridge Wells 6,883 0 0

UXBRIDGE.—Alterations to "Southfield," the new Council offices, for the U.D.C. :—

S. H. Bristow	£429	2	9
— L. Aston	425	0	0
— Vaisey	374	10	0
Fassnidge	354	0	0
*W. S. Try	353	0	0

WAKEFIELD.—350 houses on the Snapethorpe housing estate, for the T.C. :—

*G. Crook & Sons, Ltd.

WAKEFIELD.—Renovations and painting at the City Library caretaker's house, for the City Council :—

*Broadbent & Sons.

WOLVERHAMPTON.—Alterations and additions to the offices at the Sewage Outfall Works, Barnhurst, for the T.C. Borough Surveyor :—

*Dudley & Jenks, Wolverhampton..... £720

WOLVERHAMPTON.—New buildings at the Wolverhampton and Staffordshire General Hospital, for the Board of Management. Messrs. Elcock & Sutcliffe, FF.R.I.B.A., architects, 21, Northumberland-avenue, W.C.2 :—

J. Caddick, Son, & T. E. Yates, Ltd., Wolverhampton	£51,180	0	0
J. McLean, Coven	50,563	14	3
J. Hickin & Sons, Willenhall	50,000	0	0
Wilson Lovatt & Sons, Ltd., Wolverhampton	48,977	0	0
T. & S. Ham, Wolverhampton	48,800	0	0
A. J. Crump & Sons, Ltd., Dudley	48,600	0	0
Tilt Bros., Bromsgrove	47,997	0	0
A. Powell, Wolverhampton	47,906	0	0
R. Speake & Sons, Wolverhampton	47,250	0	0
F. J. E. Tooby & Sons, Wolverhampton	46,993	0	0
H. Willcock & Co., Wolverhampton	46,875	0	0
Mark Round & Sons, Ltd., Dudley	46,874	0	0
Melville, Dundas & Whitson, London	46,860	0	0
W. T. Nicholls, Ltd., Gloucester	45,989	0	0
*W. Sharratt, Ltd., Wolverhampton	45,826	0	0
A. H. Guest, Ltd., Stourbridge	44,779	0	0

British Standard Specifications.

The British Engineering Standards Association has just issued five new British Standard Specifications for Red Oxides of Iron for Paints, Zinc Oxide Oil Paste for Paints, White Lead and Tinted White Lead, Ready Mixed Paint, and Extra Hard Drying Varnish. They contain clauses regulating the composition, together with standard reception tests, for the purchase of these materials, together with appendices giving methods of carrying out the tests. These specifications have been prepared at the request of the paint manufacturers by a committee representative of both the buying and manufacturing interests, and as in the case of all British Standard Specifications, they will be reviewed as experience of their working or progress in the industry renders it necessary, and revised issues will be published from time to time. Amongst other specifications in hand which will be published as completed are the following :—Red Oxide of Iron Paste (Class 1 and 2), Lead chromes, Prussian blues, Lithophone, Lithophone Oil Paste, Carbon Black, Gold Size, Zinc Oxide and Tinted Zinc Oxide, Ready Mixed Paint.

Copies of these five new specifications (Nos. 261, 262, 272, 273 and 274–1926) can be obtained from the B.E.S.A. Publications Department, 28, Victoria-street, S.W.1, price 2s. 2d. each, post free.

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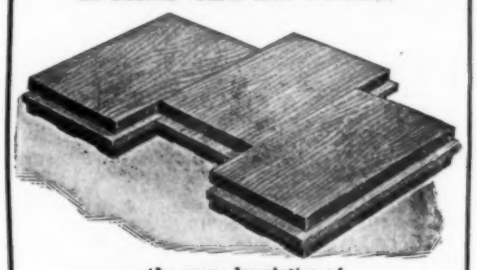
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